

**DOVER** Publications, Inc.,

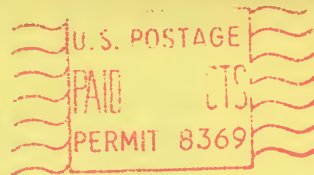
180 Varick Street,

New York, New York 10014

REQUEST FREE  
DOVER CATALOG



BULK RATE



*Branch  
Box*

T Nelson, Sys Eng  
Interlocking Sys Co  
Box 1546  
Poughkeepsie, N Y



ATTENTION...MATHEMATICIANS, MATH HISTORIANS!

NEWS ABOUT AN UNUSUAL INTRODUCTION TO TOPICS OF ELEMENTARY MATH!

Dear Reader:

Every once in a while, an unusual math book comes along that combines readability and substance in a single text. As a publisher who specializes in math books, I am delighted when I come upon one of these special volumes. And as a mathematical reader, you are, no doubt, just as pleased.

The news I have today concerns just such a book -- one of the most successful combinations of relaxing, stimulating and informative reading that you will ever see in a math book. We at Dover have just reprinted:

100 GREAT PROBLEMS OF ELEMENTARY MATHEMATICS: Their History and Solutions by Heinrich Dörrie. First English translation, prepared specially for Dover by David Antin, of "Triumph der Mathematik." 112 figures. Prefaces. Index.  
x + 393pp. Paperbound \$2.00

There is a good chance that you have heard of this book at one time or another, perhaps under its original German title, which can be translated as "The Triumph of Mathematics." Apparently, quite a few people have, judging from the letters we received asking about the possibility of our preparing a translation that would make the book available to English-language readers.

Naturally, I was surprised that a book that had never been translated into English should have a following in this country. Once I looked into it, however, and contacted a few of our examiners in the field, I understood. Despite its title, this book is not just a collection of miscellaneous math puzzles. Nor is it simply a history of mathematics. Instead, it is a little of both -- a book that will fascinate anyone interested in unusual approaches to mathematics or in out-of-the-way aspects of its history.

What Dörrie has done is to take mathematical problems that we, today, take for granted -- such as calculating the log of a number, or measuring a circle -- and to show how the men who first solved them went about it without the convenient charts and formulas we now have at our disposal. These solutions opened up a dozen new fields of study in mathematics and reading through them will certainly strengthen your understanding.

But you don't have to be a mathematical wizard to follow Dörrie's explanations, or even to try working out the answers on your own. Despite the fact that they have engaged some of the greatest mathematical minds of history, in only one or two instances do the solutions assume anything more on your part than the theorems of elementary mathematics!

Math students! Not only will this book sharpen your understanding of dozens of mathematical topics, but it contains a lot of historical and background information not covered in textbooks.

(Over, please)



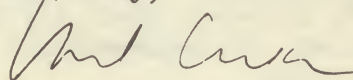
Teachers at all levels! Introduce new math subjects in the classroom by way of these famous problems and see if your students don't react. All solutions and proofs are provided in full -- often with simpler alternates.

Laymen! If you are at all interested in mathematics, in its history, or in the unique challenges it has presented to human ingenuity, then this book is definitely for you.

I urge you to order your copy of Dörrie's 100 GREAT PROBLEMS as soon as possible. We've been selling math books for some years now, and I know how quickly our printings of books like this disappear from stock. Be certain of getting your copy by ordering today.

Of course, Dover's guarantee assures your complete satisfaction or your full purchase price will be refunded. Just return the book to me within 10 days if you are not fully satisfied. No questions asked.

Yours truly,



Hayward Cirker, President  
Dover Publications, Inc.

P.S.

While I have your attention, allow me just a few words about another new Dover book that should interest you:

FUN WITH FIGURES by J.A. H. Hunter. 150 problems, with answers.  
15 typical solutions in full. xii + 109pp. 5 3/8 x 8 1/2.  
Paperbound \$1.00

Once again, we went out of the U.S. in search of unusual math books for our readers. This absolutely delightful collection of puzzle-problems hails from Canada, where Commander Hunter reigns as the favorite of thousands of enthusiasts of this very special genre. (He has lots of friends on this side of the border, too.)

Every one of these 150 puzzlers is fun -- fun to read and fun to solve. No more than high school math is needed to solve them, yet some are sure to stop even the experienced fan, at least for a while.

Dörrie /ind ltr/65



ATTENTION...MATHEMATICIANS, MATH HISTORIANS!

NEWS ABOUT AN UNUSUAL INTRODUCTION TO TOPICS OF ELEMENTARY MATH!

Dear Reader:

Every once in a while, an unusual math book comes along that combines readability and substance in a single text. As a publisher who specializes in math books, I am delighted when I come upon one of these special volumes. And as a mathematical reader, you are, no doubt, just as pleased.

The news I have today concerns just such a book -- one of the most successful combinations of relaxing, stimulating and informative reading that you will ever see in a math book. We at Dover have just reprinted:

100 GREAT PROBLEMS OF ELEMENTARY MATHEMATICS: Their History and Solutions by Heinrich Dörrie. First English translation, prepared specially for Dover by David Antin, of "Triumph der Mathematik." 112 figures. Prefaces. Index.  
x + 393pp. Paperbound \$2.00

There is a good chance that you have heard of this book at one time or another, perhaps under its original German title, which can be translated as "The Triumph of Mathematics." Apparently, quite a few people have, judging from the letters we received asking about the possibility of our preparing a translation that would make the book available to English-language readers.

Naturally, I was surprised that a book that had never been translated into English should have a following in this country. Once I looked into it, however, and contacted a few of our examiners in the field, I understood. Despite its title, this book is not just a collection of miscellaneous math puzzles. Nor is it simply a history of mathematics. Instead, it is a little of both -- a book that will fascinate anyone interested in unusual approaches to mathematics or in out-of-the-way aspects of its history.

What Dörrie has done is to take mathematical problems that we, today, take for granted -- such as calculating the log of a number, or measuring a circle -- and to show how the men who first solved them went about it without the convenient charts and formulas we now have at our disposal. These solutions opened up a dozen new fields of study in mathematics and reading through them will certainly strengthen your understanding.

But you don't have to be a mathematical wizard to follow Dörrie's explanations, or even to try working out the answers on your own. Despite the fact that they have engaged some of the greatest mathematical minds of history, in only one or two instances do the solutions assume anything more on your part than the theorems of elementary mathematics!

Math students! Not only will this book sharpen your understanding of dozens of mathematical topics, but it contains a lot of historical and background information not covered in textbooks.

(Over, please)



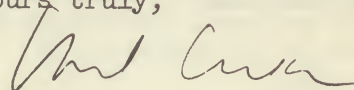
Teachers at all levels! Introduce new math subjects in the classroom by way of these famous problems and see if your students don't react. All solutions and proofs are provided in full -- often with simpler alternates.

Laymen! If you are at all interested in mathematics, in its history, or in the unique challenges it has presented to human ingenuity, then this book is definitely for you.

I urge you to order your copy of Dörrie's 100 GREAT PROBLEMS as soon as possible. We've been selling math books for some years now, and I know how quickly our printings of books like this disappear from stock. Be certain of getting your copy by ordering today.

Of course, Dover's guarantee assures your complete satisfaction or your full purchase price will be refunded. Just return the book to me within 10 days if you are not fully satisfied. No questions asked.

Yours truly,



Hayward Cirker, President  
Dover Publications, Inc.

P.S.

While I have your attention, allow me just a few words about another new Dover book that should interest you:

FUN WITH FIGURES by J.A. H. Hunter. 150 problems, with answers.  
15 typical solutions in full. xii + 109pp. 5 3/8 x 8 1/2.  
Paperbound \$1.00

Once again, we went out of the U.S. in search of unusual math books for our readers. This absolutely delightful collection of puzzle-problems hails from Canada, where Commander Hunter reigns as the favorite of thousands of enthusiasts of this very special genre. (He has lots of friends on this side of the border, too.)

Every one of these 150 puzzlers is fun -- fun to read and fun to solve. No more than high school math is needed to solve them, yet some are sure to stop even the experienced fan, at least for a while.

Dörrie /ind ltr/65

Postage  
Will Be Paid  
by  
Addressee

No  
Postage Stamp  
Necessary  
If Mailed in the  
United States

**BUSINESS REPLY MAIL**

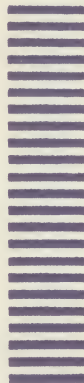
First Class Permit No. 41672, New York, N. Y.

**DOVER PUBLICATIONS, INC.**

**180 VARICK STREET**

TERL

**NEW YORK, N. Y. 10014**



Name\_\_\_\_\_

Home Address\_\_\_\_\_

City\_\_\_\_\_ State\_\_\_\_\_ Zip Code\_\_\_\_\_

## **ENTIRELY FREE!**

### **Announcements of inexpensive reprints and original books!**

Simply fill out this envelope-back,  
and drop the envelope in the mail.  
You do not have to order anything.  
No postage needed.

You are under no obligation to  
purchase, and will not be indebted  
to us. Please do not fill this out if  
you receive regular announcements  
from Dover.

Please indicate your field of interest  
below. Please place a double check  
before only one area, to indicate your  
field of primary interest. The mechan-  
ical conditions of mailing lists are  
such that we must classify each name  
under only one category. You will  
still receive notices on books in  
other categories that you single  
check.

.... Physics  
.... Chemistry

.... Mathematics  
.... Engineering  
.... Earth sciences  
.... Biological sciences  
.... Medicine, medical history  
.... Elementary science  
.... History & philosophy of science  
.... Philosophy, religion  
.... Social sciences  
.... Art (crafts, graphic arts, history  
etc.)  
.... Languages, literature  
.... Chess, puzzles, magic, humor,  
.... Classical Music Records  
.... Music

# DOVER BOOKS OF GENERAL INTEREST

**HOUSEHOLD STORIES BY THE BROTHERS GRIMM.** The finest children's edition of these immortal tales! Beautifully translated by Lucy Crane, lavishly illustrated by Walter Crane, these 53 stories are a welcome antidote to so much of today's namby-pamby "children's literature." Includes Hansel and Gretel, Rapunzel, Faithful John, The Frog Prince, Snow White, Tom Thumb, Sleeping Beauty, Rumpelstiltskin, The 12 Brothers, dozens more. 114 illustrations. x + 269pp. 5½ x 8½. Paperbound \$1.35

**BEETHOVEN AND HIS NINE SYMPHONIES, Sir George Grove.** Finest study of Beethoven's great symphonies ever published! Discusses in non-technical terms rhythmic and harmonic patterns, the influence of earlier composers, etc. 415pp. 5¾ x 8. Paperbound \$2.00

**FADS AND FALLACIES IN THE NAME OF SCIENCE, Martin Gardner.** Formerly titled **IN THE NAME OF SCIENCE**, this is the standard account of cults, quack systems and delusions that masquerade as science: hollow-earth fanatics, orgone sex energy, dianetics, Atlantis, flying saucers, etc. New chapter on such recent manifestations as Bridey Murphy. Index. x + 365pp. Paperbound \$1.75

**HOW TO CALCULATE QUICKLY, H. Sticker.** Tried and true method for increasing your number sense, doubling or tripling your calculation speed. Not a collection of tricks, but a well-planned course consisting of over 9,000 problems you can work for 5 or 10 minutes a day. Answers. 256pp. Paperbound \$1.00

**THE FRIENDLY STARS, Martha Evans Martin.** Newly revised by Prof. D. H. Menzel, Harvard Observatory. This minor classic opens a whole new world of observing to the beginning astronomer, even if you don't have expensive special equipment. Stimulating get-out-and-see-for-yourself guide. 83 new charts by Chin-Sung Yü, Hood College. xii + 147pp. Paperbound \$1.00

**THE FITZWILLIAM VIRGINAL BOOK, edited by J. A. Fuller Maitland and W. Barclay Squire.** Nearly 300 charming airs, toccatas, fantasias, pavanés, galliards, etc., including some of the finest examples of Jacobean and Elizabethan music, composed for the virginal by Giles Farnaby, John Bull, William Byrd, a dozen others. All in modern notation; can be played on any keyboard. A scarce collector's item until this reprint! Total of xxxvi + 938pp. 8¾ x 11¼. Two-volume set, Paperbound \$6.50

**TREES OF THE EASTERN AND CENTRAL UNITED STATES AND CANADA, W. M. Harlow.** Revised edition of handy, and mid-level guide to over 140 native trees, escapes. Full descriptions, more than 600 illustrations. Supplementary keys help you identify any tree you might encounter. xiii + 288pp. Paperbound \$1.35

**ILLUSIONS AND DELUSIONS OF THE SUPERNATURAL AND THE OCCULT, D. H. Rawcliffe.** Holds up hundreds of persistent delusions (crystal gazing, mediumistic trances, stigmata, lycanthropy, Indian Rope Trick, telepathy, ESP) to rational examination. Originally entitled **THE PSYCHOLOGY OF THE OCCULT**. 14 illustrations. Index. 551pp. Paperbound \$2.25

**SAILING ALONE AROUND THE WORLD, Captain Joshua Slocum.** Capt. Slocum's classic account of a single-handed round-the-world voyage in a hand-built 34-foot boat. A nearly unparalleled feat of seamanship told with vigor, wit and great descriptive power. "A nautical equivalent of Thoreau's account," Van Wyck Brooks. 67 illustrations. 308pp. Paperbound \$1.00

**AMUSEMENTS IN MATHEMATICS, Henry Ernest Dudeney.** Foremost British creator of math puzzles is consistently intriguing, witty and paradoxical in this collection of over 430 mazes, games, problems involving weighing, packing, age, chessboards, plane figure dissection, much more. Full solutions. Over 450 illustrations. 265pp. Paperbound \$1.25

**150 MASTERPIECES OF DRAWING, ed. by A. Toney.** First publication! The world's great drawings by Dürer, Rembrandt, Urs Graf, Fragonard, Boucher, Raphael, dozens of others including many masterpieces that are rarely reproduced, especially at this price! Fine, clear reproductions; one to a page. 150 plates. 168pp. 8½ x 11¼. Paperbound \$2.00



**MATHEMATICAL PUZZLES FOR BEGINNERS AND ENTHUSIASTS**, G. Mott-Smith. 188 different puzzles test, improve your powers of inference and interpretation: theory and strategy of games (tit-tat-toe, go moku, etc.), Ellipse Drawing, The Odic Force, etc. Over 100pp. of detailed mathematical explanations. Appendix of primes, roots, etc. 135 illustrations. 2nd revised edition. 248pp. Paperbound \$1.00

**AN INTRODUCTION TO BIRD LIFE FOR BIRD WATCHERS**, Aretas A. Saunders. How you can turn a casual pastime into rewarding activity with real scientific value. How to keep notes, outdoor study of feathers, finding nests, quick identification, alterations in songs, etc. 22 excellent line drawings, plus "an informative and clearly-written text," Audubon Mag. 256pp. Paperbound \$1.25

**HOW TO KNOW THE WILD FLOWERS**, Mrs. William Starr Dana. Family classic has introduced countless thousands of readers to wonders of Nature's wild flowers, U.S. and Canada. Simple, easiest-to-use classification (by season and color); 174 full-page ills. by Marion Satterlee that can be colored in; over 1,000 plants covered. Nomenclature modernized. Over 150 figs. xli + 418pp. Paperbound \$2.00

**EINSTEIN'S THEORY OF RELATIVITY**, Max Born. Nobel Laureate explains the revolutionary theory in non-technical, yet accurate terms. Revised, 1962 edition takes into account the latest findings, predictions of future work. 143 illustrative diagrams, experiments. vii + 376pp. Paperbound \$2.00

**HOAXES**, C. D. MacDougall. Hours of delightful entertainment and a work of scholarly value, this often shocking book tells of deliberate creation of nonsense news. Cardiff giant, Shakespeare forgeries, the Loch Ness monster, Biblical frauds, political schemes, literary hoaxes, over 250 others. "A stupendous collection . . . and shrewd analysis," New Yorker. 54 photos. 320pp. Paperbound \$2.00

**CHANCE, LUCK AND STATISTICS**, H. C. Levinson. Best introduction to probability and statistics presents fundamentals through a study of games of chance, shows applications in stocks, insurance, advertising, etc. Non-mathematical. Formerly THE SCIENCE OF CHANCE. xiv + 356pp. Paperbound \$1.85

**GERMAN: HOW TO SPEAK AND WRITE IT**, Joseph Rosenberg. Informal conversation method for self-study adopts successful European approach; vast number, variety of visual aids; cultural information; useful conversation; proverbs, jokes, idiom studies; etc. 400 illustrations! 384pp. Paperbound \$2.00

**1800 RIDDLES, ENIGMAS, AND CONUNDRUMS**, D. A. Hindman. Largest collection in print! Everything from wise-cracks, "corn," and nonsense to genuine puzzlers. All, of course, with answers. v + 154pp. Paperbound \$1.00

**PAPER FOLDING FOR BEGINNERS**, W. Murray and F. Rigney. Step-by-step coverage of the tricky process of making Origami, Japanese folded-paper objects, toys, useful things. Profusely illustrated with clear diagrams. 95pp. Paperbound \$1.00

**EASY-TO-DO ENTERTAINMENTS AND DIVERSIONS WITH CARDS, STRING, COINS, PAPER AND MATCHES**, R. M. Abraham. Over 300 different pastimes for all ages are included: card games; magic tricks; toy-making; math recreations; etc. Originally WINTER NIGHTS' ENTERTAINMENTS. 329 illustrations. v + 186pp. Paperbound \$1.00

**HOW TO TELL THE BIRDS FROM THE FLOWERS**, R. W. Wood. Carrots and parrots, grapes and apes, and so on in clever drawings, delightful puns, far-fetched little poems, all by a leading physicist. 106 illustrations. 60pp. Paperbound 75¢

**THE DEVIL'S DICTIONARY**, Ambrose Bierce. Sardonic and irreverent barbs that puncture the pomposity and absurdity of American life. Over 1000 alphabetically-arranged entries by America's greatest satirist in the classic tradition of Swift. "Some of the most gorgeous witticisms in the English language," H. L. Mencken. 144pp. Paperbound \$1.00



► Order form for your Dover books:

Dover Publications, Inc., 180 Varick St., New York 10014

Please send me: (quantity, author, title, price)

This image shows a single sheet of white paper with horizontal blue or grey ruling lines, typical of notebook paper. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Please send me the books indicated above. I am enclosing \$ . . . in full payment. Payment in full must accompany all orders except those from libraries or public institutions, who may be

billed. Please add 10¢ per book or record to your remittance, for postage and handling charges, on orders less than \$5.00. Residents of New York City, please add 5% sales tax; other New York State residents, 2%.

**GUARANTEE:** All Dover books and records are guaranteed to please you, and are returnable within 10 days of receipt for any reason whatever. No questions asked.

General OF/long 66

Please print these sections below. They are your labels and will be used to provide more rapid services.

If this is a new address, please give us your former address as well. Please notify us of any change in your address.

-----  
Name .....  
Home Address .....  
City .....State.....Zip code.....  
-----

**Dover Publications, Inc.**

**11 East 2nd Street, Mineola, N. Y. 11501**

**Send to:**

\_\_\_\_\_  
Name

\_\_\_\_\_  
Address

\_\_\_\_\_  
City State Zip code

**Special fourth-class rate—Books. Return postage guaranteed.**



Now available in facsimile . . . . at the low, almost unbelievable cost of \$1.00

THE ORIGINAL  
MANUSCRIPT  
OF "ALICE"

ALICE'S ADVENTURES  
UNDER GROUND

by Lewis Carroll

Alice's adventures were "born on a golden afternoon" in July 1862, when the Rev. Charles Lutwidge Dodgson (better known as Lewis Carroll) took the three small daughters of Dean Liddell of Christ Church, Oxford, on a boating trip up the Isis. It was especially to please his favorite of the three, Alice Liddell, then ten years old, that Carroll began to invent the whimsical details of Alice's encounters with the White Rabbit, her alternating turns at shrinking very small and growing to gigantic proportions, and all the other curious happenings that have since delighted readers for generations. Throughout many later boating trips Carroll continued relating his tale and one day promised Alice to write the story down for her.

Eventually Carroll did just that, and two years later Alice Liddell received a remarkable Christmas gift from him: a white vellum-bound book in which the story of "Alice's Adventures under Ground" was carefully printed in Carroll's hand, with many of his drawings illustrating the book, giving his own conceptions of the White Rabbit, Alice herself, the Gryphon, the "drink me" episode, the caterpillar on the mushroom, "Father William," the trial of the Knave of Hearts, and other familiar characters and scenes.

This Dover book is a facsimile of that wonderful Christmas gift, exactly as Lewis Carroll hand-lettered and illustrated it himself. This manuscript was the original version of the Alice story (apart from whatever lost earlier notes may once have existed) and it is very different from the book "Alice's Adventures in Wonderland" that we all know. For instance, you will find that the famous shaped poem, "The Mouse's Tale," is completely different here from the known version. It is fascinating to compare the two versions of the Alice tale and note how various episodes evolved into their final form.

The story of Alice's tumble down a rabbit-hole and her subsequent adventures became one of the best loved, most enduring tales of all time. Because of the extraordinary popularity of the tale, Carroll

thought that many readers would like to see the story in its original form, so he borrowed the Liddell manuscript and supervised a facsimile edition put out by Macmillan of London in 1886. The Macmillan edition is now a very rare book. As for the manuscript itself, after passing through several hands, it became available for sale in New York in 1948, was purchased for \$50,000, and was donated to the British Museum, where it now remains.

This present Dover edition of this unique book is probably much the closest approximation that has ever been made to Carroll's manuscript. It has been prepared from new photographs made from the manuscript, and now, for the very first time, the title page and dedication page, which Carroll colored elaborately, have been reproduced in their original colors and are shown on the front and rear covers of this book. The contents are exact in every detail, including the photograph of Alice Liddell (aged seven) still attached to the final page of the original — a special feature which even the Macmillan 1886 edition did not offer. And to make this edition complete, the following material has been included from Carroll's 1886 book edition: his preface and postscript; his "Easter Greeting"; the poem called "Christmas Greetings"; and the two pages of advertising.

There is also a new introduction by Martin Gardner, author of "The Annotated Alice," outlining the publishing history of "Alice." In this, Gardner quotes two charming letters that Carroll wrote to Alice Liddell when she was grown up, asking for permission to use her copy for the 1886 facsimile edition. These reveal many details about the publication of that edition, including the problems that occurred when the photographer absconded with the blocks.

Complete, unabridged reproduction of the original manuscript, with additional material from the Macmillan 1886 edition. Introduction by Martin Gardner. 38 illustrations by Lewis Carroll. 128pp. 5½ x 8½.

Paperbound \$1.00



\$1.00



## THE HUMOROUS VERSE OF LEWIS CARROLL

\$2.00

The acknowledged master of those who compose humorous verse was Lewis Carroll. This Dover edition offers you 150 Carroll verses—almost every poem he ever wrote. You will find parodies, burlesques, riddles, whimsies, ballads, songs (one with Carroll's own music), extravaganzas, acrostics, and other types, including several of his serious poems. Many poems are annotated to explain contemporary allusions, and this edition retains 130 original illustrations by Tenniel, Frost, Holiday, Furniss, and Carroll himself.

In one volume you acquire the complete texts of such rare books as "Phantasmagoria," "Rhyme and Reason," and "The Hunting of the Snark," as well as favorite poems from "Alice's Adventures in Wonderland" and "Through the Looking Glass." Here, too, are early versions of "The Mouse's Tale" and "The Mock Turtle's Song"; satires on academic politics at Oxford; and parodies of middle English verse, ballads, tales of knightly romance, and novelistic methods.

"The editors have performed a task for which addicts will be grateful . . . there is nothing for the faithful to do but to sit down and fall to the banquet," New York Times. "Consistently amusing, witty, and ingenious," Saturday Review.

Formerly titled "The Collected Verse of Lewis Carroll." Unabridged reprinting of 1933 edition. Index to first lines. 130 illustrations. xiv + 446pp. 5½ x 8. Paperbound \$2.00

## SYMBOLIC LOGIC and THE GAME OF LOGIC by LEWIS CARROLL

\$1.50

These two books, reproduced here in one volume, are among the most entertaining logical works ever written and contain some of the most thought-provoking puzzles ever devised. Dealing mainly with the syllogism and the sorites (chain of syllogisms), "Symbolic Logic" develops a fascinating diagrammatic method of drawing conclusions from propositions. With his usual genial wit and humor, Carroll has devised a wealth of examples and exercises that are both amusing and perplexing. For example, what conclusions can you draw from these premises.

Animals, that do not kick, are always unexcitable. Donkeys have no horns. A buffalo can always toss one over a gate. No animals that kick are easy to swallow. No hornless animal can toss one over a gate. All animals are excitable, except buffalos.

Test your ingenuity on more than 200 such examples and more than 380 problems!

In the little known "The Game of Logic," Carroll shows how logic can become a highly entertaining game played with two diagrams and a set of four red and five gray counters—either played alone or in competition with others. Hundreds of tricky syllogisms are presented for solution.

ANSWER: Donkeys are not easy to swallow.

SYMBOLIC LOGIC: Index. xxxi + 199pp.; THE GAME OF LOGIC: 96pp. The two volumes bound as one. 5½ x 8. Paperbound \$1.50

## PILLOW PROBLEMS and A TANGLED TALE by LEWIS CARROLL

\$1.50

If you suffer from insomnia, perhaps you, like Lewis Carroll, will be able to divert your thoughts from your troubles by working out solutions to these problems as you lie awake at night. Even if you are not plagued by such a malady, and even if you are not quite as adept as he at figuring in your head and need the helpful assistance of pencil and paper, still the mathematical posers in this volume are sure to test your ingenuity and provide hours of stimulating entertainment.

"Pillow-Problems" is one of the rarest of all Lewis Carroll's works. It contains 72 mathematical posers ranging from those that can be solved by arithmetic, simple algebra or plane geometry, to those that require more advanced algebra, trigonometry, algebraic geometry, differential

calculus, and transcendental probabilities. On the surface they are apparently simple and straightforward, but you will soon find that their solutions depend not so much on a great knowledge of mathematics, as on the ability to find the right approach. Both numerical answers and fully worked-out solutions are given.

In "A Tangled Tale," Carroll embodies some of his most perplexing mathematical puzzles in the ten "knots" or chapters of a delightful story which has all the charm and wit of his better-known works. The Tale was originally printed as a monthly magazine serial, and many readers sent in solutions to the problems that were posed in it. In the long Appendix to the Tale that contains the answers and solutions to the problems, Carroll uses the answers sent in by readers as the basis for illuminating and entertaining discussions of the many wrong ways in which the problems can be attacked, as well as the right ways.

PILLOW-PROBLEMS: Preface and Introduction by Lewis Carroll. xx + 109pp. A TANGLED TALE: 6 illustrations. 152pp. Two volumes bound as one. 5½ x 8. Paperbound \$1.50

## DIVERSIONS AND DIGRESSIONS OF LEWIS CARROLL

\$1.65

Literate, polished satire and parody characterize this collection of prose writings by the famed author of "Alice in Wonderland." As most of this material is now extremely difficult to obtain and reposes in the treasure rooms of larger libraries, it is entirely possible that much of it will be new to you. This compendium volume contains the finest material from "The Rectory Umbrella" and "Misch-Masch," as well as the full texts of the following humorous and satirical works: "The New Method of Evaluation as Applied to Pi"; "The Dynamics of a Particle"; "Facts, Figures, and Fancies"; "The New Belfry"; "The Vision of the Three T's"; and "The Blank Cheque." The editor has also included various mathematical recreations and games not available elsewhere, and assorted puzzles, teasers and games, including the rare book "Doublets." You will be especially interested in Carroll's detailed analysis of the stage presentation of "Alice," "Isa's Journals," and similar material.

Edited by S. Dodgson Collingwood, Carroll's nephew and authorized biographer, this rare collection shows Carroll at his whimsical best. Carroll enthusiasts will get a new look at the author as a frank and avowed satirist, gently cynical, yet cutting and relentless.

Complete, unabridged reprinting of "The Lewis Carroll Picture Book," edited by S. Dodgson Collingwood. 40 photographs by Carroll new in this edition. Total of 93 illustrations, including 48 photographs taken by Carroll himself. xv + 375pp. 5½ x 8. Paperbound \$1.65

### Dover Publications, Inc. 180 Varick Street, N. Y., N. Y. 10014

Please send me the following books in the quantities indicated:

.....Carroll, ALICE UNDER GROUND .....	\$1.00
.....Carroll, DIVERSIONS AND DIGRESSIONS .....	\$1.65
.....Carroll, HUMOROUS VERSE .....	\$2.00
.....Carroll, PILLOW PROBLEMS & A TANGLED TALE .....	\$1.50
.....Carroll, SYMBOLIC LOGIC & THE GAME OF LOGIC .....	\$1.50

I am enclosing \$..... in full payment. Payment in full must accompany all orders except those from libraries and public institutions, who may be billed. Please add 10¢ per book on orders less than \$5 for postal and handling charges. Please print

Name .....

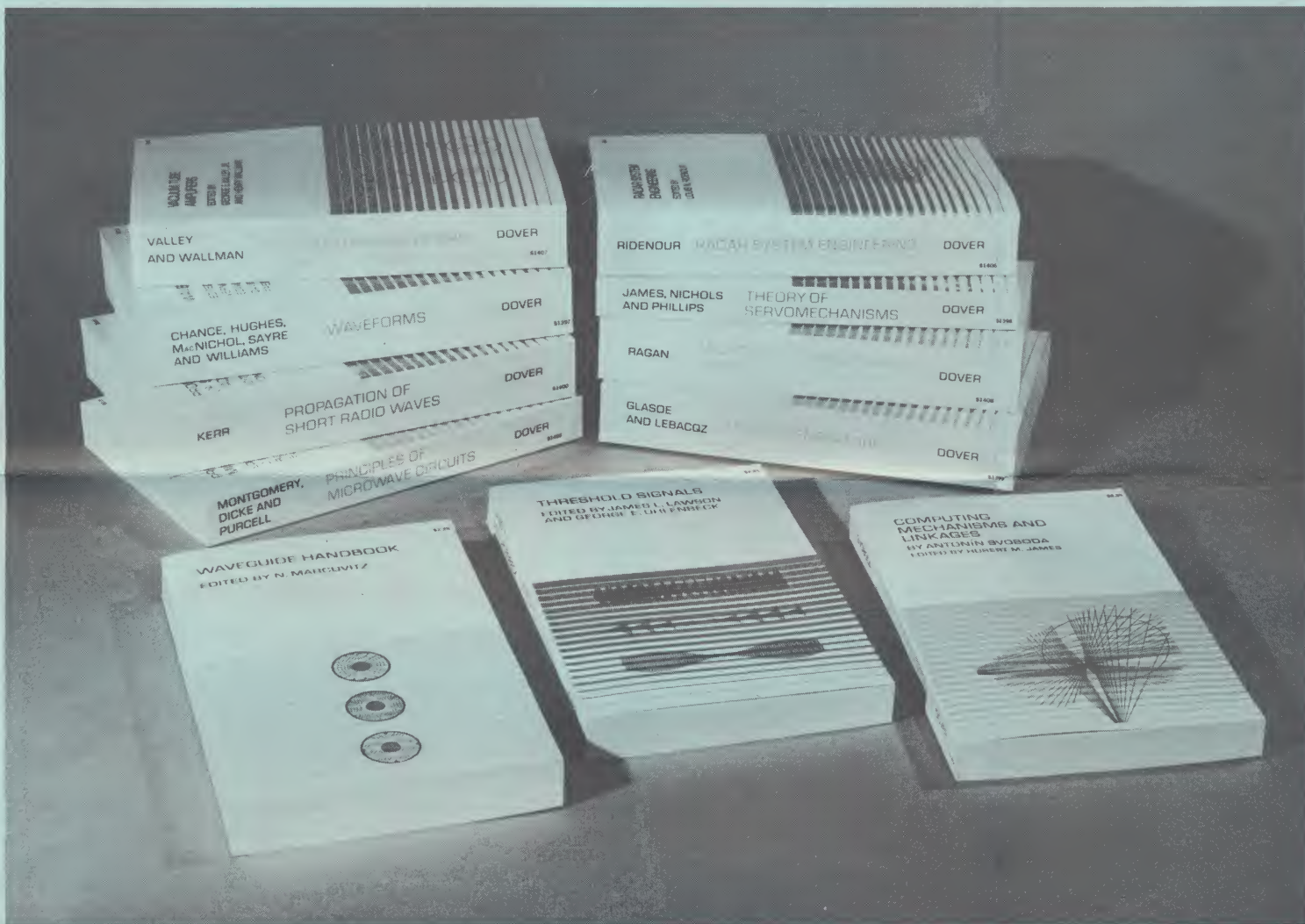
Address .....

City ..... State ..... Zip Code.....

GUARANTEE: All Dover books are unconditionally guaranteed; returnable within 10 days if not completely satisfied. No questions asked.

ALICE circ/65





The Massachusetts Institute of Technology

## RADIATION LABORATORY SERIES

Louis N. Ridenour, editor-in-chief

The highly intensified research and development effort that went into the sophistication of radar and related electronics and into high-frequency fields during World War II led not only to the production of important new military equipment but also to the accumulation of a vast body of information and techniques that have proven to be of enormous value in many branches of electronics engineering and science.

Fortunately, this body of information was not lost. As soon as security permitted, the basic material was gathered together by a huge team of scientists, engineers and other workers who had come together at the Massachusetts Institute of Technology expressly for that purpose. It was then published under the auspices of the National Defense Research Committee in a series of volumes known as the M. I. T. Radiation Lab Series, which appeared through the late 1940's and early 1950's.

The research described and the results summarized in these volumes is actually the collective work of many different laboratories—Army, Navy, university and commercial—both in the United States and in England, Canada and other commonwealth nations. The authors of the individual volumes or of chapters or sections were carefully selected from among the small army of experts with intimate knowledge of the various fields to be covered. Louis N. Ridenour was chosen Editor-in-Chief to lead and direct the entire project.

The result of all this ambition and effort is the most distinguished and comprehensive series on radio engineering ever published. These books are vital to the work of engineers and scientists, to practical field workers and technicians and laboratory experimenters, to electronics enthusiasts and hobbyists in all walks of life, to students and teachers of technical courses at every level. Each volume is profusely illustrated with dozens of graphs, charts, diagrams and circuits and each is heavily annotated with bibliographical references for further reading. And with such enormous resources behind them they represent scientific investigation of so large a scope as to guarantee that they will never be duplicated.

Twelve of these volumes have now been reprinted in Dover paperbound editions. This is the first time they have been available in low-cost, paperbound editions, and all of them are presented exactly as originally published—unaltered and unabridged.

Whether bought as a group or as individual volumes, these books will find a welcome place in your working library or in the classroom. All of them are sewn in signatures, not just glued together, and bound in laminated, washable covers that resist wear. Not a word has been altered or eliminated—these are completely unabridged reprints containing every word and figure of the original publisher's high-priced editions.



## **RADAR SYSTEM ENGINEERING**

ed. by Louis N. Ridenour

**\$3.00**

This general introduction to the field of radar and the design of radar systems concentrates primarily upon microwave pulse radar. Because the material it includes is presented largely quantitatively, no background in advanced mathematics, physics or engineering is required.

The first eight chapters introduce the subject and take up the problems of system design (the radar equation for free-space propagation, the minimum detectable signal, microwave propagation, properties of radar targets—both simple and complex, groundpainting by airborne radar, limitations of pulse radar, c-w radar systems, types of radar indicators, coding, etc.). Next, the book examines the major design considerations for important components of a radar set, provides examples of actual systems, and takes up moving-target indicators and the transmission of radar displays to remote indicators via radio.

446 figs. 32 tables. Bibliography in notes. Index. xviii + 748pp. 5½ x 8½.  
Paperbound **\$3.00**

## **PROPAGATION OF SHORT RADIO**

**WAVES** ed. by Donald E. Kerr **\$3.00**

This compilation of fundamental information on the theory of radio-wave propagation, ray tracing and scattering opens with an introduction that defines the terms that are used and that presents a concise outline of the major problems that workers will encounter in practical field work in this area.

The body of the text begins with the theory of propagation of very short electromagnetic waves in free space, over a plane earth and over a spherical earth. This is followed by material on the effects of the electromagnetic properties of the earth; the effects of atmospheric refraction; types of distribution of refractive index in the atmosphere—an essentially meteorological section; various experiments investigating the effects of atmospheric refraction on microwave transmission; the effects of reflections from the earth's surface; properties of the radar cross-section; meteorological echoes (from incoherent scatterers, the drop theory, precipitation echoes, etc.); and the relation between absorption and dispersion.

308 figs. 47 plates. Appendices. Indices. xvii + 728pp. 5½ x 8½.  
Paperbound **\$3.00**

## **THEORY OF SERVOMECHANISMS**

ed. by H.M. James, N.B. Nichols

and R. S. Phillips

**\$2.25**

Beginning with a classification of servo systems according to their control characteristics (relay-type, definite-correction and continuous-control servomechanisms), this book goes on to become a very useful reference guide to both of the major aspects of this subject; sinusoidal steady-state analysis and statistical methods of servomechanism design.

Contents: analyses of simple systems; performance specifications; a brief history of design techniques; the mathematical concepts and techniques fundamental to the theory of servomechanisms (the weighting function, the frequency-response function, the Laplace transform, transfer function, systems with feedback, etc.); an introduction to servo components; general design principles for servomechanisms; filters and servosystems with pulsed data; statistical properties of time-variable data; rms-error criterion in servomechanism design; and some applications of the design method.

159 figs. 8 tables. Appendix: Table of Integrals. Bibliography in notes. Index. xvi + 375pp. 5½ x 8½.  
Paperbound **\$2.25**

## **COMPUTING MECHANISMS**

**& LINKAGES** by Antonin Svoboda

ed. by Hubert M. James

**\$2.25**

This book contains a detailed study of continuously acting computing mechanisms, primarily bar-linkage computers, and of the mathematical design for their elements. Because of the pressures of the war, its material centers around design methods rather than systematic analysis and

this practical emphasis, in large part, gives the book its importance.

Beginning with a brief survey of the standard elements of mechanical computers (additive cells, multipliers, resolvers, cams, integrators), the author proceeds to a general discussion of bar linkages and to specific discussions of terminology, graphical procedures, generators of functions of one independent variable, the important mathematical methods in bar-linkage design, and design methods for bar-linkage generators of functions of two independent variables.

177 figs. 34 tables. Bibliography in footnotes. Appendices: Tables of Harmonic Transformer Functions; Properties of the Three-bar-linkage Nomogram. Index. xii + 359pp. 5 $\frac{3}{8}$  x 8 $\frac{1}{2}$ . Paperbound \$2.25

## **THRESHOLD SIGNALS** ed. by James L. Lawson and G.E. Uhlenbeck **\$2.25**

In this volume, the editors have taken pains to offer both a theoretical and an experimental analysis of the factors that affect the perception of desired signals in the presence of interference, especially inherent receiver noise. Because this material, which deals only with vacuum tubes, is basic, it remains valid today despite newer developments in electronics.

Contents: the various types of signals (unmodulated, amplitude-modulated, frequency-modulated and phase-modulated continuous-wave signals; infinite, finite and modulated pulse trains); mathematical description of noise; basic origins of internal noise (thermal and shot, current noise, flicker effect, positive ion fluctuations and noise within the receiver); external noise (clutter); detectability of signals in the presence of noise; threshold pulsed signals in clutter; threshold signals in electronic interference; threshold modulations for amplitude-modulated and frequency-modulated continuous-wave systems; etc.

172 figs. 17 tables. Bibliography in notes. Index. xii + 388pp. 5 $\frac{3}{8}$  x 8 $\frac{1}{2}$ . Paperbound \$2.25

## **WAVEFORMS** ed. by Britton Chance, Vernon Hughes, E.F. MacNichol, David Sayre and F.C. Williams **\$3.25**

This is a basic reference on the use of circuit techniques in the generation and manipulation of voltage and currents by linear and nonlinear circuit elements. Written to facilitate timing, computation or measurement, it is arranged according to function rather than to circuit or tube type, allowing circuit designers to locate the desired material quickly.

The text begins with linear and nonlinear circuit elements and their application to the generation of a variety of waveforms. It then goes on to analyze a waveform with respect to amplitude or time and to discuss the selection of a portion of a given wave; various modulation and demodulation methods used in precision circuits; linear time modulation; the basic aspects of the synchronization of waveform generators in frequency multiplication and division of sinusoids or pulses; methods of addition, subtraction, differentiation, integration, multiplication, squaring and square-root extraction; and specialized delay devices.

758 figs. 10 tables. Bibliography in notes, appendix. Glossary. Index. xxii + 758pp. 5 $\frac{3}{8}$  x 8 $\frac{1}{2}$ . Paperbound \$3.25

## **VACUUM TUBE AMPLIFIERS** ed. by G.E. Valley, Jr. and Henry Wallman **\$3.00**

The amplifiers discussed here are designed to have extreme values in one of the pertinent characteristics: bandwidth, sensitivity, linearity, constancy of gain over long periods of time, etc. In most cases, the design of such amplifiers cannot be carried out by simple rules of thumb.

Thus, the book opens with the theoretical basis for the high-fidelity reproduction of transient signals, such as rectangular pulses. Subsequent chapters apply these principles and deal with designing amplifiers intended to handle pulses of varying magnitude; theoretical and practical aspects of several methods of amplifying pulse-modulated carrier frequencies as high as 200Mc/sec.; ways in which inverse feedback can



be employed to stabilize the gain of an amplifier; noise (thermal and shot sources); getting the best signal-to-noise ratio; measuring amplifier sensitivity; etc.

391 figs. 43 tables. Bibliography in notes. Appendices: Realizability of Filters, Calculation of Load-Tuning Condenser, Drift of Vacuum-Tube Characteristics Under Constant Applied Potentials. Index. xvii + 743pp. 5 $\frac{3}{8}$  x 8 $\frac{1}{2}$ . Paperbound \$3.00

## **PULSE GENERATORS** ed. by G.N.

**Glasoe and J.V. Lebacqz** \$3.00

The editors have divided this study of the basic theory and techniques of pulse generation and pulse-transforming networks into three parts: hard-tube pulsers (those wherein only a small part of the stored electrical energy is discharged during a pulse); line-type pulsers (those wherein all the stored energy is released); and pulse-transformers (which transform the energy in a pulse to the level impedance of an r-f oscillator).

Part I: basic output circuit; discharging and charging of the storage condenser; vacuum tubes as switches; driver circuits; etc. Part II: pulse-forming network; switches (rotary and enclosed fixed spark gaps, hydrogen thyratron); etc. Part III: relationships between the elements in the equivalent circuit of the pulse-transformer and the optimum load impedance, pulse duration and efficiency; general design methods; effect of pulse-transformer parameters on the pulse shape when resistance and magnetron (or biased-diode) loads are used; materials and their uses; etc.

502 figs. 30 tables. Bibliography in notes. List of symbols. Index. xiv + 741pp. 5 $\frac{3}{8}$  x 8 $\frac{1}{2}$ . Paperbound \$3.00

## **WAVEGUIDE HANDBOOK**

ed. by N. Marcuvitz \$2.25

The essential subject of this volume in the series is the reformulation of microwave field problems as microwave network problems, specifically the class of electro-magnetic "boundary value" or "diffraction" problems descriptive of the scattering properties of discontinuities in waveguides. The equivalent-circuit data it presents comprise the most comprehensive collection available anywhere for waveguide junctions and discontinuities.

The book begins with the mode concept and the transmission-line formulation of field equations. It then takes up various field-structures, propagation, attenuation, and other characteristics of the transmission-line modes in the major types of uniform and nonuniform waveguides; outlines elements of microwave network theory; and provides the equivalent-circuit parameters for a variety of non-dissipative N-terminal microwave structures (beyond-cutoff and radiative waveguide terminations, obstacle and aperture discontinuities in waveguides, gratings in free space, E- and H-plane T- and Y-junctions, thick apertures, etc.). Throughout the book, results are presented analytically and shown graphically in plots of unusually high degrees of accuracy.

288 figs. 23 tables. Appendix: Arc Sine Sums. Glossary. Index. xiv + 428pp. 5 $\frac{3}{8}$  x 8 $\frac{1}{2}$ . Paperbound \$2.25

## **PRINCIPLES OF MICROWAVE**

**CIRCUITS** ed. by C.G. Montgomery,

**R. H. Dicke and E.M. Purcell** \$2.25

The impedance concept and the equivalent circuits of microwave devices constitute the basic subject matter of this book. Treating only linear circuit elements, the editors have stressed the underlying principles and theoretical results, with specific devices discussed only as illustration of the general methods described.

Starting with Maxwell's equations, the first part of the book presents a full description of guided electromagnetic waves. The concept of impedance is then generalized to apply to waveguide circuits. One of the major objectives of the book is to show how to interpret waveguide phenomena in terms of network theory. Thus, there is a review of low-frequency network theory, from which general network theorems are developed which apply to both high- and low-frequency circuits. The

final paper, "The Symmetry of Waveguide Junctions," emphasizes the results that follow from symmetry properties.

294 figs. 21 tables. Bibliography in notes. Index. xvi + 486pp. 5 $\frac{3}{8}$  x 8 $\frac{1}{2}$ . Paperbound \$2.25

## **MICROWAVE TRANSMISSION**

**CIRCUITS** ed. by G. L. Ragan \$3.00

Here is a wealth of theoretical and practical information on problems of microwave transmission along coaxial lines or waveguides. Limited to circuits operating within a wavelength region extending down from about 12cm to about 1.2cm, with corresponding frequencies of 2500 to 25,000Mc/sec., it is primarily an exposition of principles and general techniques, although some designs are presented with actual performance data.

Contents: conventional transmission line theory and its applications; materials and techniques of microwave transmission design; connecting sections of transmission lines by means of couplings; coaxial line supports; waveguide pressure seals; high-power breakdown; flexible sections of coaxial lines and waveguides; transfer of r-f energy from a coaxial line to a waveguide or from one waveguide to another; variable impedance transformers; r-f power dividers and switches; theory and design of microwave filters; etc.

624 figs. 47 tables. Bibliography in notes, at some chapter ends. Index. xvii + 725pp. 5 $\frac{3}{8}$  x 8 $\frac{1}{2}$ . Paperbound \$3.00

## **MICROWAVE ANTENNA THEORY**

**& DESIGN** ed. by Samuel Silver \$3.00

An excellent reference guide for people in the field, this book presents the basic theory that underlies the design and operation of various types of dipole and reflector antennas. The treatment is technical and mathematical and includes a full discussion of the electromagnetic theory and physical optics that are involved in microwave antenna design.

The material falls into four main divisions: basic theory, theory and design of feeds, theory and design of complete antenna systems, and antenna-measuring techniques and equipment. Topics covered include: reciprocity theorems, radiation from current distribution, wave fronts and rays, scattering and diffraction, aperture illumination and antenna patterns, microwave transmission lines, microwave dipole antennas and feeds, linear array antennas and feeds, waveguide and horn feeds, dielectric and metal-plate lenses, pencil-beam and simple fanned-beam antennas, shaped-beam antennas, antenna installation, impedance measurements, primary and secondary feed pattern measurements, detectors, amplifiers, recorders, etc.

338 figs. 7 tables. Bibliography in notes. Index. xviii + 623pp. 5 $\frac{3}{8}$  x 8 $\frac{1}{2}$ . Paperbound \$3.00

Dover Publications, Inc., 180 Varick St., N. Y., N. Y. 10014

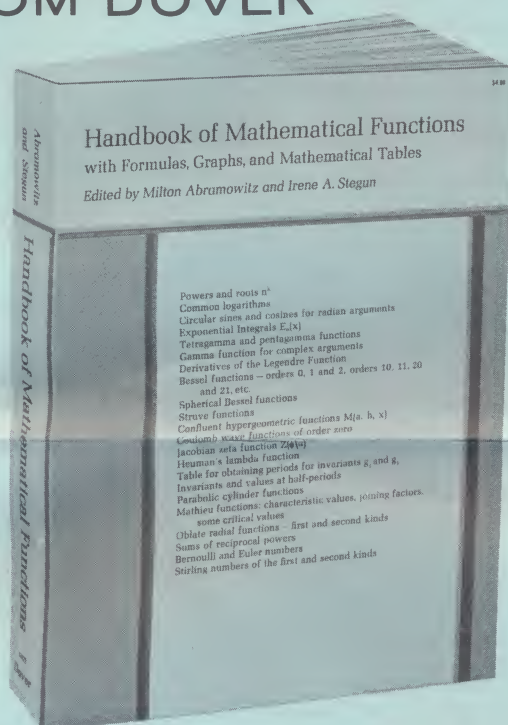
Please send me the following RADIATION LAB SERIES volumes in the quantities listed below:

Quantity	Title	Price
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
.....	.....	.....
I am enclosing \$..... in full payment. (Payment in full must accompany all orders except those from libraries or other public institutions, who may be billed.) Please add 10¢ per book on orders less than \$5.00, for postage and handling. Please print		
Name	.....	.....
Address	.....	.....

City ..... State ..... Zip #.....  
GUARANTEE: All Dover books unconditionally guaranteed. Returnable within 10 days if you are dissatisfied for any reason. No questions asked. Rad. Lab/circ



# MATHEMATICAL TABLES AND AIDS FROM DOVER



## MATHEMATICAL TABLES AND FORMULAS

Compiled by Robert D. Carmichael and  
Edwin R. Smith

**\$1.25**

Here is an extremely useful collection of mathematical tables and formulas for the use of students in mathematics courses and other courses which require numerical computation or involve processes based on mathematics up to and including calculus.

Part I contains all tables necessary for college algebra and trigonometry courses. Table I. Common logarithms (40 pages); II. Important constants; III. Logarithmic trigonometric functions; IV. Logarithmic sines and tangents of small angles; V. Natural trigonometric functions for angles which are multiples of 15°; VI. Natural trigonometric functions; VII. Four-place logarithms; VIII. Four-place antilogarithms; IX. Four-place logarithmic trigonometric functions; X. Four-place natural trigonometric functions; XI. Logarithmic trigonometric functions of angles expressed in radian measure; XII. Table for changing from sexagesimal to circular measure of angles; XIII. Natural trigonometric functions of angles expressed in radian measure; XIVa. Table for changing from circular to sexagesimal measure of angles; XIVb. Minutes in decimals of a degree.

Part II includes numerical tables not generally accessible to students of college mathematics—but which are frequently useful in computation: XV. Powers, roots, and reciprocals; XVI. Natural logarithms; XVII. Exponential and hyperbolic functions; XVIII. Multiples of  $M$  and of  $1/M$ ; XIX. Ten-place logarithms of prime numbers. Part III offers formulas and graphs for references: formulas and theorems from algebra, from elementary geometry, from trigonometry, from analytic geometry, from calculus, graphs for reference, tables of integrals, and infinite series.

The tables have all been carefully computed, or else compiled from tables of known accuracy, and every possible precaution has been taken to guard against errors. Students, practicing mathematicians, engineers, and others whose work involves constant use of mathematics will find this book an extremely practical and time-saving tool.

Unabridged, unaltered republication of original edition. Explanatory introduction. viii + 269pp. 5-3/8 x 8-1/2. Paperbound \$1.25

## HANDBOOK OF MATHEMATICAL FUNCTIONS with Formulas, Graphs, and Mathematical Tables

revised, corrected edition, edited by  
Milton Abramowitz and Irene A. Stegun

**\$4.00**

This monumental work, first published by the U. S. Dept. of Commerce in 1964, is an exhaustive and completely self-contained summary of the mathematical functions that arise in physical and engineering problems. An outgrowth of the 1954 conference held under the joint auspices of M.I.T. and the National Science Foundation to discuss a modernization and extension of the Jahnke and Emde classical tables of functions, this book is the most ambitious and helpful collection of its type ever published. It offers more extensive and more accurate numerical tables, large collections of mathematical properties of the tabulated functions, and covers a greater number of functions than other works of its kind.

The book contains a total of 29 groups of tables—about 150 tables in all—some worked out to as many as 20 places. They include: mathematical constants; physical constants and conversion factors (6 tables); exponential integral and related functions (7); Bessel functions of integer (12) and fractional (13) order; confluent hypergeometric functions; Coulomb wave functions; Legendre functions (8); elliptic integrals (9); parabolic cylinder functions; Mathieu functions; spheroidal wave functions (5); orthogonal polynomials (13); probability functions (11); Laplace transforms; and others.

Each of these groups of tables is prefaced by a list of related formulas and graphs, in themselves an unusually valuable reference source. This prefatory material also gives explanations of the numerical methods involved in use of the tables that follow, bibliographies, and numerical examples illustrating the use of each table and explaining the computation of function values outside its scope. The editors' general introduction describes higher-order interpolation procedures. Well over 100 figures illustrate the text.

Republication of corrected edition of #55, Nat. Bureau of Standards—Applied Mathematics Series (1964). Preface by A. V. Astin. Foreword. Editors' Introduction. Indices to subjects, notations. 130 figures. xiv + 1,046pp. 8 1/2 x 10. Paperbound \$4.00

## SUMMATION OF SERIES

collected by L. B. W. Jolley

**\$2.25**

This is the second, extensively enlarged edition of a work that has become invaluable to all who deal with series and their summations. Here you will find over 1100 common series, summed, and grouped for easy reference. The appearance of this volume eliminates the necessity for rummaging through a variety of reference books to find the series you need, thus saving a great deal of time and effort. Partial contents: arithmetical progression, geometrical progression, powers of natural numbers, products of natural numbers, figurate and polygonal numbers, inverse natural numbers, exponential and logarithmic series, binomials, simple factorials, other power series (Bernoulli's and Euler's numbers), trigonometrical summations, hyperbolic summations, trigonometrical expansions, hyperbolic expansions, Bessel functions, elliptic functions, infinite products, Fourier's series, relations between products and series, Zeta functions, Legendre polynomials, double and treble series, etc. 350 series added especially for this edition. New preface. xii + 251pp. Bibliographical references. 5-3/8 x 8-1/2. Paperbound \$2.25

## TABLES OF INDEFINITE INTEGRALS

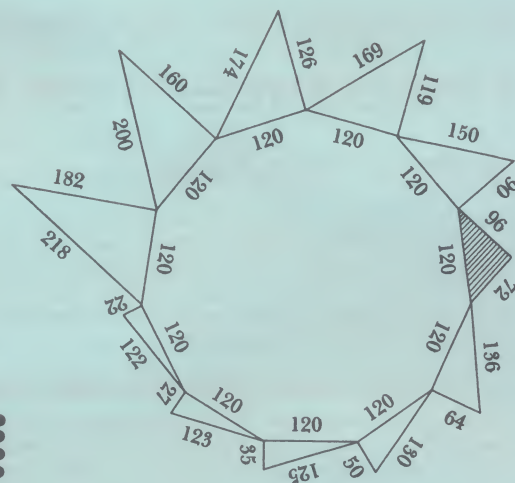
by G. Petit Bois

**\$2.00**

Indefinite integrals of a wide range of difficulty—from the most basic to some of the more complex forms—are collected and classified in this volume—2,544 in all! This book will save hours of work for students of advanced mathematics, teachers, scientists, and engineers. 49 common transformations of integral expressions are given in a preliminary listing. At least one example is included to illustrate each operation. Then, the author goes on to algebraic functions, beginning with the simple form  $(mx + n)/(ax + b)$  and including



Intriguing mathematical  
puzzle-problems -- an exciting  
approach to theory  
of numbers! Never before  
published!



## RECREATIONS IN THE THEORY OF NUMBERS

The Queen of Mathematics Entertains by Albert H. Beiler

\$2.00

How would you go about solving these problems?

One side of a right-triangle is 48. Find 10 pairs of whole numbers that may represent the other two sides.

Find the smallest number with 100 divisors.

Find the smallest number consisting solely of threes and sevens such that both the number and the sum of its digits are divisible by 3 and 7.

You may be surprised to learn that no long preliminary training is needed to work with problems like these. And you may be even more surprised to learn that their solutions can be found through a science that has been, until now, purely theoretical—the science of number theory. Only with this book is the rich potential of number theory for producing intriguing puzzle-problems fully revealed. A whole new world of math recreation is now open to all fans, from raw beginners to practiced veterans.

### Unique approach to the theory of numbers!

This never-before-published book ranges over an amazingly wide area. It discusses the number theory that lies behind such diverse topics as divisors, perfect numbers, Mersenne's numbers, the congruences invented by the ingenious Karl Friedrich Gauss, amicable and sociable numbers, the "magic" of the digit 9, logarithms, the square, decimals, Farey series, prime numbers, and the as-yet unproved (and unrefuted) Last Theorem of Fermat. Each of these—and a dozen other subjects—is introduced not as abstract theory but by way of its often unexpected recreational aspects.

By the time you are through the book, you will have covered a lot of mathematical territory, picking up important theoretical backgrounds in algebra, geometry, arithmetic and their more abstract extensions; learning derivations and centuries-old histories of many equations; and absorbing the work and ideas of many of the greatest theoretical mathematicians who have ever lived. And all without actually realizing that you were studying! 26 figures and more than 100 tables are included to make the learning process still easier.

Actually, though this theoretical background material is itself interesting to math students, lay readers can skip as much of it as they wish without lessening the book's challenge or curtailing their own fun. They can concentrate on the dozens of problems in the text and the 100 additional teasers listed in a separate chapter. Most of these problems are solved for you (many with completely original solutions) in another separate chapter. Bibliographies at the end of each chapter offer serious readers and students a valuable guide to further study in the specific topics of number theory.

Readily comprehended yet challenging, the problems in this book can be worked out with only the usual high school mathematics background. Once you have grasped the fundamentals, all you need is a clear mind, patience, and practice to keep going. If the author has anything to do with it, keep going you will, for he has a deep appreciation of the enjoyment which can be derived from mathematical puzzles and his book offers an irresistible attraction for everyone who has ever toyed with numbers.

First publication. Bibliographies. Solutions to text problems, plus 100 additional problems, solutions. 26 figures, 103 tables. Index. vi + 247pp. 5-3/8 x 8-1/2. Paperbound \$2.00

### DOVER PUBLICATIONS, INC., 180 Varick St., New York, 10014

Please send me the following books as indicated below:

.....Beiler, RECREATIONS IN THEORY OF NUMBERS.....	\$2.00
.....Borel, SPACE AND TIME.....	\$1.75
.....Hoffman, STRANGE STORY OF THE QUANTUM.....	\$1.50
.....Minnaert, LIGHT AND COLOUR IN THE OPEN AIR.....	\$2.00
.....Mott-Smith, HEAT & ITS WORKINGS.....	\$1.00
.....Mott-Smith, CONCEPT OF ENERGY.....	\$1.35
.....Mott-Smith, PRINCIPLES OF MECHANICS.....	\$1.35
.....Singh, GREAT IDEAS & THEORIES OF COSMOLOGY.....	\$1.85
.....Singh, GREAT IDEAS OF MODERN MATHEMATICS.....	\$1.75

I am enclosing \$..... in full payment. Payment in full must accompany all orders except those from libraries or other public institutions, who may be billed. Residents of New York City, please add 5% sales tax; other New York State residents, 2%. Please print

Name .....  
Address .....  
City ..... State.....  
Zip Code .....

GUARANTEE: All DOVER books unconditionally guaranteed and may be returned within 10 days for any reason whatever. Full purchase price refunded; no questions asked. Beiler/64



An important new Book-Explaining-Science

# THE CONCEPT OF ENERGY SIMPLY EXPLAINED

by Morton Mott-Smith

\$1.35

The tremendously accelerated pace of modern life in comparison with earlier periods in man's history was made possible by the revolution in scientific ideas that occurred in the middle of the last century. One of the events that fostered this revolution was the discovery of the principle of energy conservation and the establishment of the mechanical theory of heat.

## Full, non-technical introduction to thermodynamics!

In this elementary study, the background, nature and immediate repercussions of that development are traced in terms that are accessible to laymen and to beginning science and engineering students, yet with a scientific accuracy and thoroughness that are absolutely reliable. This is a truly worthwhile book explaining science, the only one of its kind in the field of thermodynamics!

The main emphasis of the book is on the theoretical developments and technical advances connected with the concept of energy. It has chapters on early steam engines; the engine indicator, which made testing and research possible; the motive power of heat; the heat-engine cycle; the history of the conservation of energy idea (precursors, caloric theories, the mechanical equivalent of heat, principle of excluded perpetual motion, the work of Carnot and Joule, etc.); entropy; heat engines; internal combustion engines; and mechanical refrigeration. Each includes a great deal of background, going all the way back to the discovery by Hero of Alexandria (in 1 A. D.) that heated air could provide mechanical force.

In effect, the book is a complete, non-technical introduction to the modern theory and the basic applications of thermodynamics. Quoting repeatedly from many hard to find sources in the literature, providing biographical material on dozens of the most important

contributors, and explaining the operation and use of machines, engines, and other apparatus, it gives you a full picture of the major theoretical and practical breakthroughs accomplished by such men as Boyle, Carnot, James Watt, Huygens, Joule, Helmholtz, Gay-Lussac, and Joseph Black.

## Profusely illustrated . . . useful bibliography!

The illustrations are a great advantage, for they help bring the engaging text to even clearer reality. The Newcomen atmospheric engine, Watt's steam indicator, the Diesel cycle, Linde's Liquid Air machine, high-pressure steam cycles, Gay-Lussac's free expansion experiment, a commercial ammonia absorption plant, the perfect gas cycle, and other pieces of apparatus and diagrammatic sketches are all carefully drawn and labeled to illustrate the theory and applications covered in the text.

Physics and engineering students and curious laymen who want to go deeper into theory and background will find Mott-Smith's bibliographical aids, footnoted throughout the book and listed in an additional guide to further reading, an invaluable help. But if all you want is a solid grounding in the basic fundamentals of some of the most important scientific developments underlying the modern age, then there is enough within the covers of this remarkable volume to satisfy you.

"A very competent, well illustrated, elementary exposition of what the text books call thermodynamics," Books.

Unabridged, corrected (1964) edition. Formerly titled, "The Story of Energy." List of illustrations. Index. Bibliography. 33 illustrations. ix + 215pp. 5-3/8 x 8-1/2. Paperbound \$1.35

## OTHER DOVER BOOKS EXPLAINING SCIENCE

### HEAT AND ITS WORKINGS, Morton Mott-Smith

Concise and complete, one of the finest elementary introductions to the surprisingly complex subject of heat ever written: theory and attributes of heat; measuring; transmission; effects on solids, liquids, gases; heat and pressure; brief notes on experiments that led to major discoveries; etc. Simple, readable style. Bibliography. 50 illustrations. x + 165pp. Paperbound \$1.00

### GREAT IDEAS AND THEORIES OF MODERN COSMOLOGY, Jagjit Singh

Description, explanation and evaluation of the work of Jeans, Eddington, Einstein, Dirac, Gamow, Hoyle, and many others. Clear analogies, terse, careful prose make these vital concepts comprehensible even to non-mathematical readers. A Dover original. Index. xii + 276pp. Paperbound \$1.85

### SPACE AND TIME, Emile Borel

A world-renowned mathematician introduces you to relativity, keeping his notes on the basic math to a separate section. Never been surpassed for insight and extraordinary clarity of thought as it explains difficulties due to motion, geodesic lines, gravity, X-rays and crystal structure, the special theory of relativity, much more. Indexes. 4 appendices. 15 figures. xvi + 276pp. Paperbound \$1.45

### THE STRANGE STORY OF THE QUANTUM, Banesh Hoffmann

An account, using the barest amount of mathematics, for general readers of the growth of ideas underlying our present atomic knowledge. New postscript carries the story through 1958. "Of the books

attempting an account of . . . modern atomic physics which have come to my attention, this is the best," Prof. H. Margenau, Yale U. 32 illustrations, tables. 257pp. Paperbound \$1.50

### PRINCIPLES OF MECHANICS SIMPLY EXPLAINED: An Introduction to Popular Physics, M. Mott-Smith

A foundation in physics upon which you can build with further study. Density, the nature of matter and space, the vacuum, levers and pulleys, dynamics, inertia, gravity, momentum and acceleration, kinetic and potential energy, etc., all in non-technical, everyday terms of reference. 45 illustrations. Index. Chronology. x + 171pp. Paperbound \$1.00

### THE NATURE OF LIGHT AND COLOUR IN THE OPEN AIR, M. Minnaert

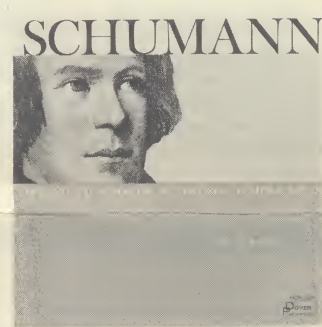
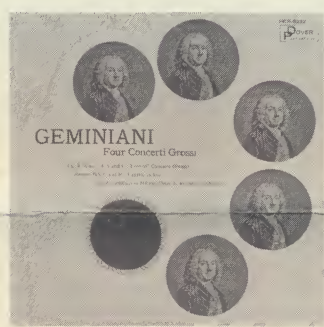
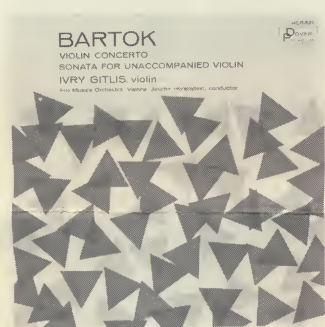
What causes mirages, the fata morgana, multiple suns and moons? Why are shadows different colors at different times? Why does falling snow sometimes seem black? These and similar mysteries in optics and light are explained to non-specialists—photographers, painters, nature and science students. 202 illustrations, including 42 photos. xvi + 362pp. Paperbound \$2.00

### GREAT IDEAS OF MODERN MATHEMATICS: Their Nature and Use, Jagjit Singh

Differential equations, matrices, group theory, transformations, logic, statistics, others of the main mathematical ideas actually in use in modern sciences, all explained to intelligent laymen. A Dover original. Indexes. 65 illustrations. x + 312pp. Paperbound \$1.75



Announcing the new Dover classical record series . . .  
 important recordings of  
 J. S. Bach, Mozart, Telemann, Geminiani, Schubert,  
 Schumann, Bartok, Stravinsky . . .  
 in high-quality recordings at the unbelievably  
 low price of \$2.00 each!



Now ready! Thirteen important classical records which you will be delighted to have in your collection or to give to friends!

May we invite you to participate with us in a new development in recorded music . . . a series of high-quality, classical records, available directly to you at a fixed price, with no strings attached; at the extremely low price of \$2.00 each, yet tops in quality.

One of the most unfortunate aspects of the music-record industry has been the frequency with which good recordings fall out of print and become unobtainable. We have long regretted this situation, and disagree with the point of view which it represents. In collaboration with a board of musicologists, we have examined the out-of-print field of records, and have decided to reprint the records described on this circular, and to make available once again valuable music that belongs in the collection of the serious music lover.

Each of the records we have chosen has had to pass a very hard test:

- \* First-rate music, enjoyable, culturally significant
- \*\* First-rate performance, alive, vigorous, understanding
- \*\*\* First-rate sound, clear, balanced, noise-free

Twelve of the tapes we settled upon had been previously issued by a leading company, and were acclaimed critically when they appeared. The thirteenth record (the Gimpel playing of Bach partitas) is something of a coup, since it has never been released before in the United States.

**All purpose 12" monaural 33 1/3 records, play  
 equally well with hifi or stereo equipment!**

We have spared no expense to make these the best monaural 33-1/3 records possible. Do not confuse them with low-grade "economy" records with archaic performances and cheap plastic.

We have printed upon pure vinyl discs to make as permanent a record as possible (and have had as many as three cuttings to assure clean sound); we guarantee plus-A-plus quality control, with each record visually inspected before packing. The results are records equal to anything on the market. If you do not agree with us, you can return any record you buy from us, for full refund. (Incidentally, we destroy all returned records, so that you need not fear getting a used record.)

**Now only a fraction of their former price!**

These records were first published by a major company at \$4 to \$6 each. We offer them at only \$2.00 each. How are we able to do it? The

reasons are several. We have published many language records, and are able to produce efficiently; but we are primarily book publishers and are able to make use of the distribution and market know-how of the book industry, which are superior to those of the record industry.

Please note that this is an out-right offer. This is not a club; you do not have to buy a certain number of records. You are not committing yourself on future records we issue. You owe us nothing except original purchase price. Nor is it a premium, or a "gimmick" or a come-on.

Use these records to enlarge or start your own collection. Most of the music is not generally available elsewhere. These are also first-rate gift-items. Most persons are delighted with records for Christmas or other special events. Let us urge you to place your order immediately, though. You can avoid the possible delay of waiting for a second printing if you place your order right away.

**MOZART—Divertimento for Violin, Viola and Cello in E Flat Major (K 563) and Adagio & Fugue in F Minor (K 404a) \$2.00**

This divertimento, one of the very few works which Mozart wrote for a string trio, has long been a favorite. Alfred Einstein, the great Mozart scholar, has called it "like the finest, most perfect trio ever heard." The adagio and fugue, based ultimately upon a theme by W. F. Bach (the oldest son of J. S. Bach), is the only recording of one of Mozart's finest works, long considered lost. A basic record for every collection. "Extremely beautiful recording, strongly recommended," Observer. (51 minutes)

**GEMINIANI—Six Concerti Grossi, Opus 3 \$2.00**

Rated as an equal by Bach and Handel (who adapted his music) Geminiani has unfortunately been long neglected. In recent revivals of 18th century music, however, he is once again attaining the attention he deserves. Halfway between Corelli and Handel, he combined contrapuntal richness with Italian harmonic wealth. This is the only recording of these 1733 concerti. Played by the Barchet Quartet, Helma Elsner (Harpsichord), Pro Musica of Stuttgart. "I warmly recommend it, spacious, magnificent, I enjoyed every bar," C. Cudworth, Record News. (52 minutes)



**STRAVINSKY—Violin Concerto in D, Duo Concertante, Jeu de Cartes** \$2.00

The great violin concerto, 1931, is one of the truly great modern classics which should be known by every music lover. Transparent, passionate, inevitable, it is a remarkable vehicle for the soloist. The Duo Concertante was written to contrast tonalities of piano and violin, while the Jeu de Cartes is a very unusual, gay, brilliant, and melodious ballet. Violin played by Ivry Gitlis; piano by C. Zelka; Concerts Cologne Orchestra, Bamberg Symphony. "Imaginatively played and beautifully recorded," E. T. Canby, Harpers Magazine. (55 minutes)

**J. S. BACH—Partitas for Unaccompanied Violin, No. 2 (D Minor), No. 3 (E Major)** \$2.00

These are inexhaustible works for both performer and listener. For the concert violinist they are the supreme test, and for the listener universal masterpieces, the depths of which seem impossible to plumb. The D Minor is an architectonic wonder, 39 variations on a ground, characterized by P. Spitta as "a triumph of spirit over matter such as even Bach never repeated more brilliantly." This is the first release of a truly memorable recording by Bronisław Gimpel—perfect in technique and sound. We urge you to try this record; it is one of the finest we have ever listened to. (53 minutes)

**SCHUBERT—Sonata in C Minor, in B Major** \$2.00

"Our pianists scarcely realize what a glorious treasure they have in Schubert's piano compositions," wrote Liszt in 1868. Today, this treasure is appreciated. The C Minor, one of the Three Grand Sonatas, is nearly supreme for its romantic exuberance and richness; the B Major is less well-known, but highly rewarding. "A magic substitution of sound and melodic and harmonic inspiration," said A. Einstein. Played by F. Wuehrer. "A superb pianist for this; musicianship, sweep, power, and an ability . . . such as few have had since Schnabel," H. Schonberg. (49 minutes)

**MOZART—Early Quartets: G Major (K 80), D Major (K 155), G Major (K 156), C Major (K 157)** \$2.00

Mozart's early quartets, written in the Italian style, have a charm and lightness that only Mozart could give to music, and it is lamentable that they have been so overshadowed by the later works. K 80 dates from 1770, Lodi, while the other three were written at Bolzano in 1772. "Perfect of its kind, an eternal moment of joy," Alfred Einstein. This is the only separate recording. Played by the Barchet Quartet. "Filled with sunshine and youthful joy; played with verve, recorded sound live and brilliant," Christian Science Monitor. (51 minutes).

**MOZART—Serenade #9 in D Major (Posthorn) K 320, Serenade #6 in D Major (Serenata Notturna) K 239** \$2.00

For Mozart the serenade was a very effective form, since he could bring to it all his inexhaustible fantasy, without adhering to the sonata form. The Posthorn (1779) introduces the short coiled horn of the coachman to the orchestra; its sombre entry in a classical minuet is one of the most thrilling moments in music. The Serenata Notturna (New Years, 1776) is a festive, almost humorous work. Both played by Pro Musica of Stuttgart, directed by van Remoortel. "Sound rich and resonant, fidelity wonderful," Rev. Of Recorded Music. (54 minutes).

**SCHUMANN—Trio No. 1, D Minor, Trio No. 3, G Minor** \$2.00

The Trio No. 1 (1847) is a favorite with chamber music enthusiasts. Fiery, romantic, headstrong, it shows Schumann's insistence upon freedom of form, his suspension of conventions, and his rich harmonic sense. The Trio No. 3, however, is little known, and it has been neglected for decades because 19th century biographers professed to see in it signs of Schumann's madness. It is highly dramatic work, more integrated thematically than most of Schumann's other work. Performed by the Trio di Bolzano. This is the only recording. "Ensemble and interpretation leave little to be desired," High Fidelity. (54 minutes)

**SCHUBERT—Quintet in A Major (Trout) and Nocturne in E Flat Major** \$2.00

If there is any single favorite of chamber music it is probably Schubert's "Trout." Written when Schubert was only 22, it opened a new world of melody, harmonic resources, and exuberance. The Nocturne, on the other hand, is not too well known, though it will not fail to please you as "beautiful and well worth hearing," Atlantic Monthly. Played by the Barchet Quartet and F. Wuehrer. "The best Trout on the market," Étude. (44 minutes)

**BARTOK—Violin Concerto, Sonata for Unaccompanied Violin** \$2.00

The Violin Concerto is, in the opinion of many, Bartok's finest work, challenging the utmost resources of the virtuoso, yet extremely beautiful. It is often said of this work, "Dissonant on first hearing; on later hearings, like Mozart." The Sonata, Bartok's last finished work (1944), is also highly rated. Both are performed by Ivry Gitlis and the Pro Music of Vienna. Indispensable in every representative collection. "Wonderful performances," Gramophone. (54 minutes)

**MOZART—String Quartet in A Major (K 464), C Major (Dissonant) (K 465)** \$2.00

It was because of these quartets that Haydn wrote to Mozart's father, Leopold Mozart, "Before God, and as I am an honest man, I tell you your son is the greatest composer known to me." All critics since have agreed that these Haydn quartets are highpoints in music. Mozart's contemporaries disapproved of the dissonance in K465, but later critics uphold Mozart. Played by the Barchet Quartet, "Mozart's loveliest in a distinguished performance," Rev. of Recorded Music. (58 minutes)

**TELEMANN—Twelve Fantasies for Harpsichord** \$2.00

Georg P. Telemann (1681-1767), although considered a friend and equal by Handel and Bach, has been mysteriously neglected until fairly recently. These twelve "German fantasies" were probably written in the early 1730's; free in form, they show the intricacy of thoroughbass music, the harmonic wealth of the "new music," melodic beauty of Italian models, and French lightness. This is the only recording. A favorite with all lovers of harpsichord music. Played by Helma Elsner. "Recommended warmly, very high quality," Disques. (50 minutes)

**SCHUMANN—Kreisleriana and Fantasia in C Major** \$2.00

Among the most popular piano music of the 19th century is Schumann's delightful Kreisleriana. Intimately associated with his stormy romance with Clara Wieck, it consists of a set of variations upon a basic Clara theme. The Fantasia in C Major ("if not Schumann's chief masterpiece") is Schumann's brilliant attempt to reconcile classical form with romantic freedom of invention. Both works are played by the eminent Vlado Perlemuter of the Paris Conservatoire. "The best to date," Billboard. (55 minutes)

**Dover Publications, Inc., 180 Varick St., New York 14, N.Y.**

Please send me the following records in the quantities indicated:

- |  |   |
|--|---|
| <input type="checkbox"/> Bach, Partitas \$2.00             | <input type="checkbox"/> Schubert, Piano Sonatas \$2.00     |
| <input type="checkbox"/> Bartok, Violin Concerto \$2.00    | <input type="checkbox"/> Schubert, Trout Quintet \$2.00     |
| <input type="checkbox"/> Geminiani, Concerti Grossi \$2.00 | <input type="checkbox"/> Schumann, Trios \$2.00             |
| <input type="checkbox"/> Mozart, Serenades \$2.00          | <input type="checkbox"/> Schumann, Kreisleriana \$2.00      |
| <input type="checkbox"/> Mozart, Divertimenti \$2.00       | <input type="checkbox"/> Stravinsky, Violin Concerto \$2.00 |
| <input type="checkbox"/> Mozart, Early Quartets \$2.00     | <input type="checkbox"/> Telemann, Harpsichord \$2.00       |
| <input type="checkbox"/> Mozart, Late Quartets \$2.00      |   |

I am enclosing \$2.00 per record, plus 10¢ per record for postage and handling charges on orders less than \$5.00. (Please send payment in full; we are able to maintain these low prices only by keeping our overhead and bookkeeping expenses low.) Please print

Name.....

Address.....

City..... Zone..... State.....

GUARANTEE: Full return privileges. If you do not like these records for any reason whatever, return them to us within 10 days after you receive them, for full refund. No questions asked. Small classical records/63



The standard, practical guide, now in its first low-cost edition!

# AN INTRODUCTION TO PATENTS: For Inventors and Engineers

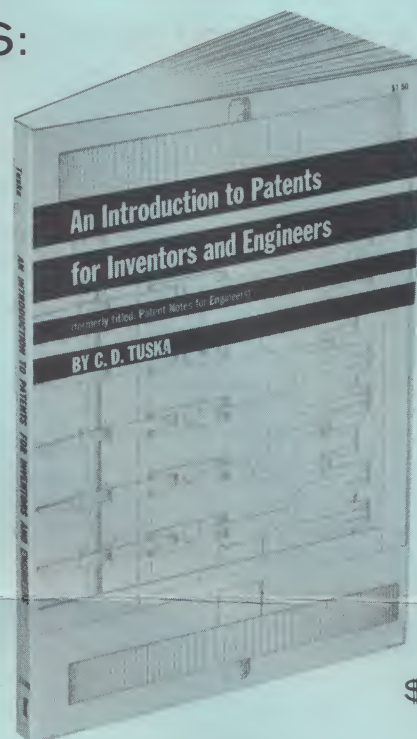
by C. D. Tuska

Technical men, spare-time experimenters, would-be inventors, anyone, in fact, who is engaged in technological research at any level should certainly be acquainted with all the procedures relating to patent matters. And he should be aware, too, of the precautions and pitfalls that surround his rights and obligations in this area. This book provides sound, up-to-date guidance to the whys and hows of protecting your rights when the possibility of a patentable invention arises, indicating many of the danger signals along the road from the original moment of discovery to the point of actual patent ownership.

Beginning with a discussion of the nature of invention, the author, who is a former director of the Patent Department of the Radio Corporation of America, goes on to give you a fundamental picture of what exactly constitutes statutory, or legal, invention, examining negative definitions and the essential requirements for a patentable development as interpreted by the courts. Furthermore, he devotes a chapter to the practical side of statutory invention in which he covers such important matters as oral disclosure, written description, reduction to practice, and so on, and offers suggestions to be followed during the patenting process. The treatment in this section of the book is never overly technical, nor does it take you into complex areas of patent law without first clarifying the terminology and concepts you will meet there.

**Practical, usable advice from an expert!**

Following this are two chapters that go more deeply into specific steps and measures: keeping accurate records, the standard disclosure form, appeals, reissues, disclaimers, and the like. There is also an important discussion of the mechanics of interference—what happens when two or more parties claim rights to virtually the same invention. Finally, the author covers patent claims as handled by the patent office, the ownership and use of patents, the inventor's rights when his discovery is made while in someone else's employ, patent infringements, and other miscellaneous aspects of the subject.



**\$1.50**

For many years the standard, practical guide to patent problems and procedures, this compact book, with its helpful references to actual court cases and precedents, its patent illustrations and working plans, its sample forms and applications, has saved many from heartache and headache. It is a golden opportunity for inventors and engineers to learn from the long experience of someone who has actually been through it all himself.

Formerly "Patent Notes for Engineers." Enlarged introduction to Dover edition. Index. 27 patent drawings. 18 other illustrations. vi + 192pp. Paperbound **\$1.50**

# COLLECTED PAPERS ON ACOUSTICS

by Prof. Wallace Clement Sabine, Harvard University

**\$2.00**

Today, when acoustical considerations are crucial to the design and construction of concert halls, recording and television studios and lecture rooms, the pioneering work of Wallace Clement Sabine (1868-1919) has taken on a new importance. Though few in number, his published writings constitute the still-valid foundations of the study of sound in enclosed spaces, and, because they were written not for technical journals but for builders, engineers, and architects, their terminology and ideas are completely accessible, even to musicians and musical laymen who will profit from them.

**Never out of date!**

The 11 papers included in this collection virtually mapped out a new science. From them, we can see that Prof. Sabine was the first to bring quantitative measurement to bear upon this area of acoustics, the first to conduct research on optimal reverberation time for music rooms, and the first to state what is still the basis of the science of sound control—that the product of total absorption and the duration of residual sound is a constant. These papers are his most important writings, the records and results of a creative scientist, shaping the science he created.

An early paper, "Reverberation," discusses in detail Prof. Sabine's great initial experimentation in connection with the Fogg lecture room at Harvard and with the new Boston Music Hall (known today as Symphony Hall and hailed as one of the finest auditoriums in the world for symphonic music). "Sense of Loudness" is an account of his experimental measuring of what is now called an equal-loudness contour, while each of the other papers in this volume literally created

a new area of investigation for the physical scientist: "The Accuracy of Musical Taste in Regard to Architectural Acoustics. The Variation of Reverberation with Variation in Pitch;" "Melody and the Origin of the Musical Scale," which emends Helmholtz's explanation of harmony; "Effects of Air Currents and Temperature;" "The Correction of Acoustical Difficulties;" "Theater Acoustics;" "Building Material and Musical Pitch;" "The Insulation of Sound;" and "Whispering Galleries." One other paper, "Architectural Acoustics," is a good summary of Prof. Sabine's early researches.

The amazing thing about these writings is how lucid and articulate they are. Prof. Sabine prided himself on his ability to state problems and solutions in terms that could be understood by laymen and by the architects and builders who had most to learn from his research, as well as by the physical scientist. His work is constantly referred to by acousticians even today, for it is filled with ever-fresh information and insights into perennial acoustical problems.

As an historical document, too, this book is invaluable; it offers an inside view of the emergence of a new scientific discipline from the dedication and genius of a single man. An excellent introduction, written for this new edition by Prof. F. V. Hunt of Harvard's Physics Department, provides a picture of the historical and immediate circumstances surrounding Prof. Sabine's first investigations and an evaluation of the man and his work.

Unabridged, unaltered republication of original edition, with a new introduction by Prof. L. V. Hunt, Harvard Univ. Preface. 131 figures, including 55 photographs. x + 279pp. Paperbound **\$2.00**



Excellent non-mathematical introduction to the most significant modern technical development ...

# TEACH YOURSELF ELECTRONIC COMPUTERS

by F. L. Westwater

Clothbound \$2.00

The inclusion of "Electronic Computers" in the popular Teach Yourself series is an important step. No other book prepared specifically for laymen and beginning science and engineering students has been so successful in explaining how a digital computer works and what it can do. Fortunately, the principles by which these modern-age wonders function are not particularly difficult to grasp; it is really their sheer physical size, the vast number of their elements, and their complex organization that puts them beyond our understanding.

The author of this book recognizes the problems non-technical readers must face in studying digital computers, and he has written his book with them in mind. Instead of oversimplifying his material by watering down the theory involved, he makes the subject intelligible by describing how the control system of an imaginary and extremely rudimentary digital computer would actually work. In this way, he can discuss the principles and theory on an elementary, non-mathematical level, yet still tie his text to actual applications.

The book opens with an introduction to the basic principles of the digital computer, covering the technique of counting by electronic impulses, storage and registration of information, arithmetical opera-

tions, machine functions, programming, and the presentation of results. This is followed by chapters on each of the elements and theories that go into the digital computer: the binary system of arithmetic; logic and logical design (Boolean algebra, representation of negative numbers, etc.); storage devices; the control system; and input and output devices. Also covered are applications to scientific and other problems (linear programming, gas and electricity billing, mathematics, payroll, etc.); new techniques and uses (reading, weather prediction) in the future; and modern methods and recent advances in programming.

In short, every aspect of digital computers is covered, and all in a lucid, interesting manner. The mathematics is kept to a minimum, and other areas of everyday life are brought in for analogy. Thus, readers with only a basic mathematics background will be able to follow along without difficulty. Used either as a first book on digital computers, in preparation for further, more detailed study of computer use and design, or as an only book by readers who just want a general understanding, there is no finer introduction to the uses, principles, and functions of digital computers than this Teach Yourself book.

39 illustrations. viii + 151pp. 7 x 4-1/4.

Clothbound \$2.00

## OTHER NEW TEACH YOURSELF BOOKS

### TEACH YOURSELF BUDGERIGARS for Pleasure and Profit

Eric Leyland

Parakeets and how to breed them for your own pleasure and for profit, too. Unusual British treatment, with many techniques and ideas not generally known in the U. S. Covers cages and equipment, food, selective breeding, diseases, free flight aviaries, a dozen other topics, plus exact specifications for building your own equipment and advice and suggestions that can save you time and money. 17 illustrations. 186pp. Appendix: The Budgerigar Society. 7 x 4-1/4.

Clothbound \$2.00

### TEACH YOURSELF SONGWRITING

Martin Lindsay

If you understand the construction and notation of elementary melody and harmony, then this little book can both help you to begin writing songs and, even more important, get you to analyze the popular song market so as to make those songs successful. No unreliable "short cut," this is a serious attempt to pass on some of the tricks of a lucrative trade. viii + 164pp. 7 x 4-1/4.

Clothbound \$2.00

### TEACH YOURSELF HISTORY OF MUSIC

Allen Percival

The development of the sounds and style-characteristics of music from earliest times (3,000 B.C.) to the present age of experimentation (Berg, Poulenc, Copland, etc.), with invaluable discussions of social, economic, political influences, and a lot of important basic information that is not generally found in music histories written for the non-specialist. Hundreds of composers, national schools, musical forms are discussed and placed within an historical context that will add to your listening pleasure and to your general understanding of each period. 35 musical excerpts. 318pp. 7 x 4-1/4.

Clothbound \$2.00

### TEACH YOURSELF HISTORICAL GEOGRAPHY

J. B. Mitchell

A somewhat more extensive treatment of its subject than other Teach Yourselfs, this detailed guide to historical geography is the finest introduction to a growing branch of geography. What is historical geography? What sources of information are available to the historical geographer? How do we determine the origin of an area's people? Why do people settle where they do? How can we find the extent of wooded land as of a specific historical date? How does geography influence the development of industry, of transportation and communications systems? What is the place of historical geography in the geographical sciences? "An indispensable introduction for students of the subject," The Economist. 52 maps, diagrams, many full page. xvi + 356pp. 7-1/4 x 4-3/4.

Clothbound \$2.50

### TEACH YOURSELF ANTIQUE COLLECTING

Ernie Bradford

This is an excellent brief coverage of information basic to the collecting of furniture, silver, pictures and prints, pewter, jewelry, pottery and porcelain, Victoriana, enamels, clocks or other antiques. There are lots of fascinating anecdotes too, and historical information on designs and styles, unusual pieces, manufacturing methods, etc., all of which can make your own collecting more knowledgeable. 15pp. of illustrations. 215pp. 7 x 4-1/4.

Clothbound \$2.00

### TEACH YOURSELF INDOOR AQUARIA

D. Latimer-Sayer

In this one volume, youngsters and other beginning hobbyists can find all they need for maintaining an attractive, healthy aquarium in the home or office: nomenclature, how fish breathe, aeration, light, food, other basics; plants; setting up; exotic tropical and cold water fishes; breeding; enemies; treatment of common diseases. Bibliography. 93 illustrations of fish, equipment, layouts of tanks, etc. 185pp. 7 x 4-1/4.

Clothbound \$2.00

Dover Publications, Inc., 180 Varick St., New York, N. Y. 10014

Please send me the following books in the quantities indicated:

.....TEACH YOURSELF ANTIQUE COLLECTING	Clothbd. \$2.00
.....TEACH YOURSELF BUDGERIGARS	Clothbd. \$2.00
.....TEACH YOURSELF ELECTRONIC COMPUTERS	Clothbd. \$2.00
.....TEACH YOURSELF HIST. GEOGRAPHY	Clothbd. \$2.50
.....TEACH YOURSELF HISTORY OF MUSIC	Clothbd. \$2.00
.....TEACH YOURSELF INDOOR AQUARIA	Clothbd. \$2.00
.....TEACH YOURSELF SONGWRITING	Clothbd. \$2.00
.....Sabine, COLLECTED PAPERS ON ACOUSTICS	Paperbd. \$2.00
.....Tuska, INTRODUCTION TO PATENTS	Paperbd. \$1.50

I am enclosing \$..... in full payment. Payment in full must accompany all orders except those from libraries and public institutions, who may be billed. Please add 10¢ per book on orders less than \$5 for postal and handling charges. Residents of New York City please add 5% sales tax; other New York State residents, 2%. Please print

Name .....

Address .....

City.....State.....Zip Code.....

GUARANTEE: All Dover books are unconditionally guaranteed; returnable within 10 days if not completely satisfied. No questions asked. Tuska circ./64



"Master parodist of the 1920's,"  
New York Times



## PERFECT BEHAVIOR:

A Guide for Ladies and Gentlemen in all Social Crises

BY DONALD OGDEN STEWART

America in the 1920's was a paradise for readers who enjoyed good, substantial humor. It was the heyday of the parodist, the lampooner, the satirist, the wit; the period during which America wanted nothing better than to laugh, and writers such as Robert Benchley, Damon Runyan, Dorothy Parker, George Chappell, Irvin S. Cobb, and a dozen others were around to supply the demand.

Unfortunately, a lot of the top-quality, genuinely inspired comic writing that was produced during that wonderful era has fallen into neglect, leaving countless thousands of modern readers wanting. One of the most popular of these neglected humorists of the '20's is Donald Ogden Stewart. His humorous retelling of world history, his Mr. and Mrs. Haddock books, and his other writings enjoyed tremendous popularity and his classic guide to "Perfect Behavior" is no less refreshing a reading experience today than it was when it first appeared.

First new edition in almost 30 years!

Actually, you won't learn much about how to behave in any kind of social crisis from Donald Ogden Stewart's master-parody of etiquette and etiquette books, but you will learn a lot about laughter. His book is no serious guide to the social graces, no useful introduction to the proprieties and rules of the beau monde. It is, instead, a wild and witty piece of comic writing that is certain to reach even the most reluctant funny-bone. And this is its first new edition in nearly 30 years!

A host of hilarious tips and not-to-be-followed guidelines of behavior are included, each sharply underscored by the author's unerring sense of the ridiculousness that lies not too far below the surface of the obnoxious Book of Etiquette. Ranging freely over every area of social intercourse—courtship, engagements and weddings, travel, at concerts and the opera, school life, games and sportsmanship, dinners, formal dances, and so on—it covers dozens of trying (and highly unlikely) social situations and is truly the last word on how not to develop your poise, polish and sophistication.

Also considered with authoritative good humor are such important subjects as how to have a delightful honeymoon on the subway, the fine art of writing letters and composing correct invitations, how to propose, how the best man should behave, formal and informal drinking (during prohibition), rules for the girls' dormitory, correct behavior in a pullman berth, and so on. Stewart's "Lightning Calculator

of Dinner-Table Conversation" is a special laugh bonus for all readers who would like to avoid the humdrum in their casual social chatter.

Over 30 drawings that add to the fun.

34 delightful sketches by Ralph Barton accompany the text, and they are alone worth the price of the book. Bright with period flavor and fairly bursting with wit, they perfectly complement Stewart's inspired whimsy. Although we don't recommend that you use this book as a model for your behavior or that you dedicate yourself to carrying out the author's conception of Good Form, we do urge you to read and enjoy it, and that you keep it in mind as the perfect gift on any of a hundred proper social occasions.

"Superlatively well done . . . boisterous, keen . . . a wee bit risqué. Good drawings; a sense of the ridiculous makes them as successful as are the chapters," Boston Transcript. "Master parodist of the 1920's," New York Times.

Unabridged, unaltered republication. All 34 of the original illustrations by Ralph Barton. viii + 97pp. Paperbound \$1.00

\$1.00

Dover Publications, Inc., 180 Varick St., New York, N. Y. 10014

Please send me the following books as indicated below:

.....Bierce, GHOST STORIES	\$1.00
.....Stewart, PERFECT BEHAVIOR	\$1.00
.....Taine, THE TIME STREAM	\$2.00

I am enclosing \$..... in full payment. Payment in full must accompany all orders except those from libraries and public institutions, who may be billed. Please add 10¢ per book on orders less than \$5 for postal and handling charges. Residents of New York City please add 5% sales tax; other New York State residents, 2%. Please print

Name .....

Address .....

City.....State.....Zip Code.....

GUARANTEE: All Dover books are unconditionally guaranteed; returnable within 10 days if not completely satisfied. No questions asked.

Taine/64



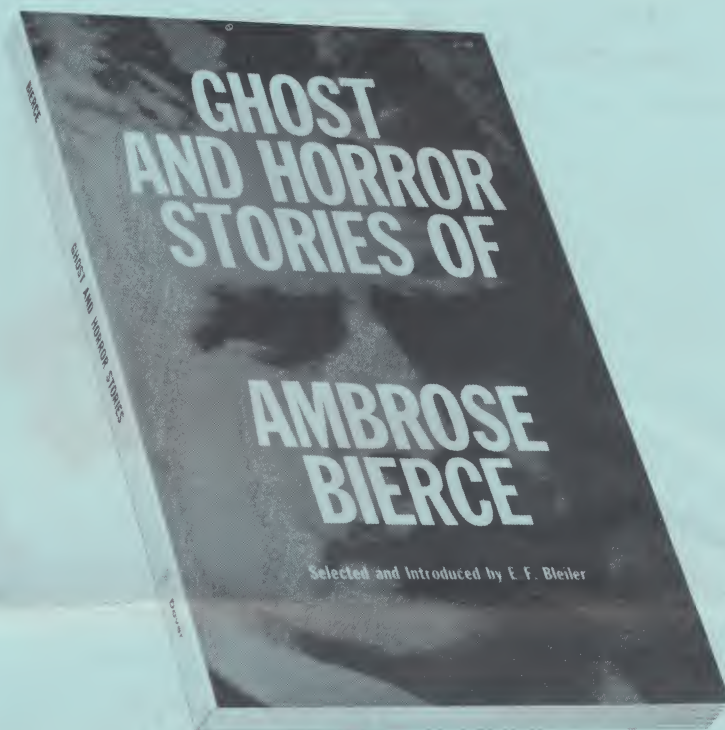
## THE GHOST AND HORROR STORIES OF AMBROSE BIERCE \$1.00

The best American ghost stories between Poe and the moderns—this is what most authorities say about the supernatural tales of Ambrose Bierce. Certainly, his stories are among the most remarkable works of their sort in English literature. They were decades ahead of their day in their technical skill, which discarded Victorian sentimentalism; they were strangely prophetic in their forebodings of present-day psychology and their understanding of the wellsprings of terror; and they were vividly imagined and brilliantly written, in Bierce's usual striking style.

About half Bierce's fictional output fitted into this genre, since the milieu seemed to appeal to his psychic constitution and represent his cynical, bitter interpretation of life. Morbid, eerie, truly horrifying, these stories take you to a twilight region of flesh and spirit, into the dark recesses of the mind. Bierce was saturated in the supernatural fiction of the Gothic novel, the Romantics and the Victorians, and very deliberately set out to create a supernatural genre of his own. In the perverse world that he created, ironies of fate, the revenge of the dead, inexplicable disappearances are norms.

In all probability you have read a couple of Bierce's stories already, since one or two are very often anthologized in collections of great short stories. Among his better-known stories are the haunting "An Inhabitant of Carcosa," which tells the experiences of a dead man as he awakens in the unimaginably far future; "Moxon's Master," perhaps a robot, perhaps madness, perhaps a hoax; "The Death of Halpyn Frazer," in which fate, murder, madness, and supernatural horror are blended in deliberate ambiguity; "The Moonlit Road," a dazzling technical achievement as Bierce tells the basic situation from three points of view, adding a new dimension each time, until he gives the dead man's story; "The Damned Thing"—are there colors that are invisible?

This present collection contains all these great stories and twenty more—in other words, all Bierce's best supernatural work. It also contains



his little-known "Visions of the Night" in which the author provides the personal background for his strange surrealistic morality. This book will provide hours of reading pleasure, since these are adult supernatural fiction, rich in concepts, brilliant in writing, which can be read over and over, with new layers of meaning appearing at each reading.

Selected, with introduction, by E. F. Bleiler. xxii + 199pp. 5-3/8 x 8. Paperbound \$1.00

## THE TIME STREAM, THE GREATEST ADVENTURE, THE PURPLE SAPPHIRE

Three science fiction novels by John Taine (Eric Temple Bell) \$2.00

Eric Temple Bell (1883-1960) was a Professor of Mathematics at the California Institute of Technology and one of the foremost professional mathematicians in the world. As a contributor to many areas of modern mathematics, his list of achievements is long and impressive enough to have won for him positions as president of The Mathematics Association of America and as vice-president of The American Mathematics Society, and many honorary awards.

It was also an open secret during his lifetime that Eric Temple Bell led an amazingly successful double career—as himself and as "John Taine," the best of the American science-fiction novelists of the 1920's.

First low-cost reprints—complete, unabridged!

Despite the fact that John Taine's books enjoyed tremendous critical acclaim and popularity during a period of highly competitive science-fiction writing, his novels have become virtually unobtainable today. It is a sign of their endurance, however, that high priced out-of-print editions are still eagerly sought on the rare book market. In this new book, his three finest novels are made available for the first time in a low-priced edition. Each of them is reprinted in its entirety, exactly as originally published.

"The Time Stream" is reprinted from its serialization in Wonder Stories Magazine, with four Frank R. Paul illustrations. This is generally considered Taine's best work; in fact, it ranks high among the

all-time classics of science fiction. Its striking combination of profound speculation (upon the nature of time, cyclical universes and the concept of entropy) and thrilling adventure in the unimaginably distant past and future makes it adult science-fiction writing at its best.

The other two novels are hardly less noteworthy, sharing, as they do, in Taine's knack for tying his fantastic narratives securely to original and effective scientific frameworks. Set in Antarctica, "The Greatest Adventure" is a biological-fiction novel whose action is keyed by the eruption of a vast undersea tar-pit and the consequent discovery of unique prehistoric species whose biological nature fails to match any existing fossil records. "The Purple Sapphire" carries you to the unexplored wildernesses of Central Asia in pursuit of the mystery behind the weird, unearthly jewel of the title. Here, you meet adult adventure among the decadent, half-forgotten remains of a supercivilization from the past.

John Taine's novels have managed to survive as well as they have largely because of the author's truly admirable literary talent. Expertly crafted and deftly written, packed with thought-provoking commentary and ideas and with a keen sense of wonder, these three exciting examples show that talent at its peak.

Unabridged reprintings of three novels. Four illustrations by Frank R. Paul. v + 532pp. Paperbound \$2.00



Now available in English!

Thorough coverage of the great problems that have exercised mathematicians for centuries. . . the Delian problem, Cauchy's mean theorem, the calculation of  $\pi$ . . .

## 100 GREAT PROBLEMS OF ELEMENTARY MATHEMATICS:

### Their History and Solution

by Heinrich Dörrie

\$2.00

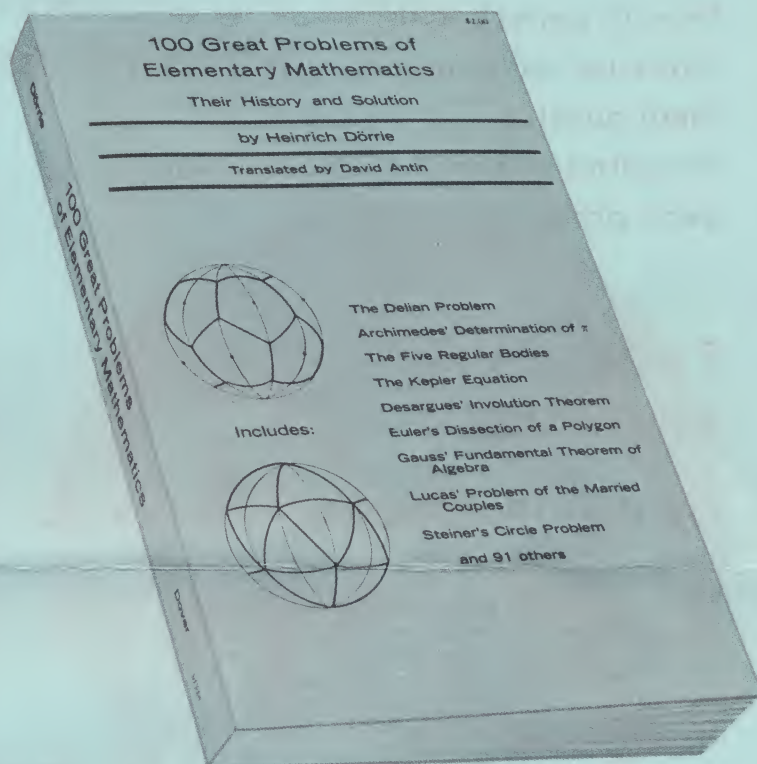
One of the most fascinating aspects of the study of mathematics is the often astonishing simplicity of the solutions to complex problems. Any reader, from the high school math student to the professional mathematician, who delights in the thought processes behind such solutions will find this book especially appealing. The incredible and exciting triumphs of the mathematical mind are presented here through 100 celebrated problems of elementary mathematics and their ingenious solutions. A compelling picture emerges from these pages, one that reveals the amazing variety of mathematical methods and bears witness to some of the more extraordinary minds of history: Archimedes, Isaac Newton, Leonhard Euler, Augustin Cauchy, Pierre Fermat, Carl Friedrich Gauss, Gaspard Monge, Jacob Steiner and many others.

How can you calculate the logarithm of a given number without the use of the logarithm table? or the angles of a triangle from the sides without tables? What is the maximum number of days that a comet can remain within the earth's orbit? How is a sundial constructed? the exact position of a ship at sea determined? On what day of the year is the twilight shortest at a place of given latitude? How must a sailboat tack with a north wind in order to get north as quickly as possible? How many ways can  $n$  married couples be seated about a round table in such a manner that there is always one man between two women and none of them is ever next to his own wife?

These are but a few of the important historical puzzlers offered and solved in this unusual volume. Grouped into six categories, there are 26 arithmetical problems, 15 planimetric problems, 25 classic puzzles concerning conic sections and cycloids, 10 stereometric problems, 12 nautical and astronomic posers, and 12 maxima and minima problems. In addition to defining the questions and giving full solutions and proofs, the author recounts their origins and history and discusses the personalities associated with them. Often he gives not the original solution but one or two simpler or more interesting demonstrations.

#### Advanced math theorems not required!

To make this book appealing to a wide variety of readers, the author has restricted the selection of problems to those involving only elementary math. Thus, those readers who lack the time or opportunity



to acquaint themselves in detail with the principles of higher mathematics can still follow this book with pleasure and understanding. In a very few special instances, for example the problems of skew lines and the Euler tetrahedron, the author gives solutions which utilize simple concepts of vector analysis, because the advantages of this method are so obvious in terms of brevity and clarity. Other than these few rare exceptions, however, the solutions throughout the book assume only a knowledge of elementary theorems.

Some of the more striking and intriguing items are: Archimedes' "Problema Bovinum"; Euler's problem of polygon division; Omar Khayyam's binomial expansion; Archimedes' squaring of a parabola; Cauchy's mean theorem; Newton's exponential series, possibly the most important series in mathematics; Andre's derivation of the secant and tangent series, by the method of zigzag permutations; the famous Fermat-Euler prime number theorem; the quadratic reciprocity law (or the Euler-Legendre-Gauss theorem), one of the most important theorems of number theory; the trisection of an angle, solved here by means of the paper strip construction of Archimedes and by means of a fixed hyperbola by the Greek mathematician Pappus; Desargues' homology theorem; Archimedes' calculation of the number  $\pi$ , which enabled him to measure the circle (the most famous of his many achievements); Pascal's hexagon theorem; Hipparchus' stereographic or polar projection; the Mercator projection; the Kepler Equation; and Steiner's ellipse, circle, and sphere problems.

#### First English translation!

The publication of this volume is good news for the math world: Dörrie's famous German text, "Triumph der Mathematik," has at last been translated into English. Prepared especially for this inexpensive paperback Dover edition by David Antin, this translation makes this valuable and important work available to the English-language audience for the very first time.

"The collection, drawn from arithmetic, algebra, pure and algebraic geometry and astronomy, is extraordinarily interesting and attractive," Mathematical Gazette.

New translation (of 5th edition) of "Triumph der Mathematik," by David Antin. 100 problems and solutions, proofs. 112 figures. Prefaces. Index. x + 393 pp. 5 $\frac{3}{8}$  x 8 $\frac{1}{2}$ . Paperback \$2.00



Now in paperback!

Unusual collection of

math puzzles.

Amusing anecdote accompanies

each problem!

## FUN WITH FIGURES

by J.A.H. Hunter

\$1.00

### A LADY AND HER LINGERIE

*His lady was lovely with glamour galore,  
She led him one day to a lingerie store.  
A dozen of these and two dozen of those  
Transparently feminine silk so-and-so's  
Would cost him, they said, six bucks less, if you please,  
Than a dozen of those and two dozen of these.  
Such extravagance, though, was way out of his reach,  
He'd only six bucks, which just bought one of each.  
Ignoring the frowns and 'tut-tuts' of the grundles,  
Just figure the price of each item of undies.*

If you are not already a devotee of the math puzzle as an intriguing source of leisure-time entertainment, you may be surprised to find an algebraic problem lurking in the guise of a humorous verse about women's lingerie. Perhaps you've watched someone engaged in a battle of wits with a strange-looking multiplication problem with only some of the digits filled in; possibly you've seen secret-code addition problems where letters substitute for numbers. If you've managed so far to escape the compelling fascination of these and many other kinds of math puzzles, this varied and ingenious collection is sure to hook you.

"Murder on the River," "A Man and His Sorrow," "She Married Them Off," and other tales; rhymed nonsense such as "Payment Past Due" and "The Ballad of Ballygan"; the tongue-twister "Milly Miffin's Muffins" and dozens of equally imaginative coverings dress up 150 tantalizing math problems which require no more than high school mathematics and yet still can delight and perplex even the professional mathematician.

Every conceivable type of mathematical recreation is represented here: rate, time, distance problems; age problems; money problems; skeleton sums; problems involving geometry and elementary algebra, or just plain straight thinking. And there are unique one-of-a-kind problems, too. All of them are inventively worded couched in wry, witty, or outlandish anecdotes that are almost as much fun as the problems themselves.

What's more, this is the first book collection ever made of Mr. Hunter's special brand of brain teaser. The author is a member of the Mathematical Association and, as the greatest math puzzle-maker around, he has a large and dedicated following of puzzle-addicts who share his knowledge that figures can be fun. In its first paperback reprint, this ingenious collection offers hours of entertainment for all mathematically-inclined readers, whether their math training stopped at grade 12 or with a Ph. D. 15 typical solutions, worked out in detail, are provided for the novice, while a complete set of answers is given for those who need corroboration of their results. At once stimulating and relaxing, these puzzles are certain to give pleasure, dangerously likely to become habit-forming.

Complete, unabridged reprint. 150 problems, answers. 15 typical solutions. xii + 109pp. 5½ x 8½. Paperbound \$1.00

### OTHER DOVER MATH PUZZLE BOOKS:

**CALIBAN'S PROBLEM BOOK: MATHEMATICAL, INFERENTIAL, AND CRYPTOGRAPHIC PUZZLES, H. Phillips ("Caliban"), S. T. Shovelton, G. S. Marshall.** 105 intermediate and advanced puzzles involving logic and inference. Some call for math knowledge from algebra to number theory. Solutions. xi + 180pp. 5½ x 8.

Paperbound \$1.25

**MY BEST PUZZLES IN LOGIC AND REASONING, H. Phillips ("Caliban").** 100 problems requiring no special knowledge, just sound reasoning. More than 30 different types for both beginner and expert. Original publication. 100 puzzles, full solutions. x + 107 pp. 5½ x 8½.

Paperbound \$1.00

**MY BEST PUZZLES IN MATHEMATICS, H. Phillips ("Caliban").** 100 cryptic puzzles requiring only elementary mathematics, a detective's eye, and an alert wit. Complete solutions for every puzzle. x + 107pp. 5½ x 8½.

Paperbound \$1.00

**MATHEMATICAL PUZZLES FOR BEGINNERS AND ENTHUSIASTS, G. Mott-Smith.** 180 math puzzles to test mental agility. Some require inference, algebra, geometry, permutations, etc. Detailed solutions. Appendix with square roots, triangular numbers, primes, etc. 135 illustrations. 2nd revised edition, 284pp. 5½ x 8.

Paperbound \$1.00

**150 PUZZLES IN CRYPT-ARITHMETIC, Maxey Brooke.** Collection of arithmetical puzzles which operate by substituting letters for numbers. Includes introduction and explanation of how to tackle puzzles. 156 problems with solutions. 72pp. 5½ x 8½.

Paperbound \$1.00

**MATHEMATICAL RECREATIONS, M. Kraitichik.** The greatness of this thorough, rigorous, yet completely entertaining examination of recreational mathematics has been recognized for years. Ranging from ancient Greece and Rome to the most modern applications of mathematical techniques for amusement, it contains some 250 puzzles, problems, situations and demonstrations (from Arabic, Hindu, Medieval sources; based upon Mersenne numbers, Fermat numbers, probability; Euler crossings; permutations; magic squares; much more)—all incorporated into a readable, informative textbook on special math fields. Includes 25 new positional and permutational games. Full solutions and analyses. 181 illustrations. 330pp. 5½ x 8.

Paperbound \$1.75

Dover Publications, Inc.,

180 Varick St., New York, N. Y. 10014

Please send me the following books in the quantities indicated:

.....Brooke, 150 Puzzles in Crypt-Arithmetic.....	\$1.00
.....Dörrie, 100 Great Problems of Elem. Math.....	\$2.00
.....Hunter, Fun With Figures.....	\$1.00
.....Kraitichik, Mathematical Recreations.....	\$1.75
.....Mott-Smith, For Beginners and Enthusiasts.....	\$1.00
.....Phillips, Caliban's Problem Book.....	\$1.25
.....Phillips, Logic and Reasoning.....	\$1.00
.....Phillips, My Best Puzzles in Mathematics.....	\$1.00

I am enclosing \$..... in full payment. Payment in full must accompany all orders except those from libraries and public institutions, who may be billed. Please add 10¢ per book on orders less than \$5 for postal and handling charges. Residents of New York City please add 5% sales tax; other New York State residents, 2%. Please print

Name .....  
Address .....  
City.....State.....Zip Code.....

GUARANTEE: All Dover books are unconditionally guaranteed; returnable within 10 days if not completely satisfied. No questions asked.

Dörrie/65



The rollicking, winsome Brownies are back!  
First reprinting in years of an American  
fantasy classic. . .



## THE BROWNIES: THEIR BOOK

BY PALMER COX

\$1.50

No one has ever seen them and very few people have heard them, but everyone has heard of them. Brownies are jovial sprites who emerge from their forest haunts during the night to indulge in sports and games, roguish pranks, and adventures of every sort. But whenever there's an unfortunate soul in need of help, the Brownies can be counted on to lend their unseen hands to remedy matters.

The Brownies were the invention of Palmer Cox (1840-1924), who received his inspiration from the folktales of the Scottish emigrants he listened to as a boy in Granby, Canada. He adapted the legends to the environment of the 19th-century youngster and created a delightful imaginary world of Brownie bands and their merry antics. The first Brownie stories appeared in the widely-read *St. Nicholas Magazine*, and their immediate popularity prompted Cox to publish them (somewhat rewritten and with additional illustrations) in book form. In all, 13 Brownie books were eventually produced, earning their author an enormous following among juvenile readers and financial success which enabled him to build a large summer home in his native Granby, which he called "Brownie Castle."

As the first—and best—of the Brownie books, this volume has been enjoyed by generations of young enthusiasts. It contains 24 episodes: visiting the zoo, the toy shop, the seashore, the circus, and the gymnasium. And the Brownies play baseball and tennis, go tobogganing, skating, canoeing, bicycling, ballooning, etc.—borrowing equipment wherever they can find it. No locks or bolts can keep the tiny buccaneers out ("Though Brownies never carry keys, they find an entrance where they please"). The next day some shopkeeper or householder will have ample evidence of their hasty efforts to replace the equipment and scurry into the woods before daybreak. Surely, the Brownies must be responsible for many of the things that "go bump in the night."

To parents who remember the Brownies, reading these timeless, refreshing tales to your children today will be a nostalgic feast for you and a treat for your young listeners. Written in a charming verse style and illustrated wittily by the author (many illustrations were reproduced in this edition directly from the *St. Nicholas Magazine* for greater clarity), these frolics are sure to cheer any youngster's imagination.

Complete, unabridged reprint of 1st edition. 24 short verse tales, with 266 illus. by the author. 155pp. 6½ x 9¼. Paperbound \$1.50

**DOVER PUBLICATIONS, INC., 180 Varick St., New York, N.Y. 10014**

Please send me the following books in the quantities specified:

.....Cox, *THE BROWNIES: THEIR BOOK* ..... @ \$1.50  
.....Cuppy, *HOW TO BECOME EXTINCT* ..... @ \$1.00  
.....Newell, *TOPSYS AND TURVYS* ..... @ \$1.00

I am enclosing \$\_\_\_\_\_ in full payment. (Payment in full must accompany all orders, except those from libraries and other public institutions, who may be billed.) Residents of New York City, please add 5% sales tax; other New York State residents, 2%. Please print

Name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ Zone \_\_\_\_\_ State \_\_\_\_\_

**GUARANTEE:** This book is fully guaranteed. If you are dissatisfied for any reason whatever, return it within ten days for a full cash refund. No questions asked.

Cox/circ./65



Each drawing is actually two! An unusual picture-rhyme book by a remarkable American illustrator

To find the famous Forty Thieves, each hid within a jar.



This troop of soldiers, all in file, are looking near and far

## TOPSYS AND TURVYS

BY PETER S. NEWELL

\$1.00

Upside down? Right side up? It makes no difference which way you pick up this picture-verse book. Turn to any page; the illustration you see has a caption beneath it. Then turn the book upside down and a magical transformation takes place: another picture appears and the story-in-verse is completed by a new caption!

Illustrator-humorist Peter S. Newell first got the idea for his topsy-turvy books when he noticed one of his younger children perusing a picture-book upside-down. He decided thereupon to produce a book which could be looked at both ways. The idea has immense appeal to young folks—and adults as well!—and the truly clever execution makes this volume a delight to read through.

Newell was a well-known turn-of-the-century illustrator famous for his original technique and his experimental flair. His "Hole Book,"

his "Slant Book," "Rocket Book," "Jungle Jangle," and other works, were all successful examples of his inventive whimsy, and the two volumes of topsys and turvys from which these sketches were selected were his most popular creations.

Altogether, 74 topsys and the turvys that go with them are reprinted in this volume. Whether they inspire your youngster to try a topsy-turvy for himself (or herself), or simply keep him amused on stay-indoors days, this collection gives him a book to treasure for its charm and captivating wit.

Selections from "Topsys and Turvys" and "Topsys and Turvys—Number 2." 74 full-page drawings, 12 in color. 76pp. 9 x 6.

Paperbound \$1.00

Exercises in delightful absurdity by a master humorist

## HOW TO BECOME EXTINCT

BY WILL CUPPY

\$1.00

Will Cuppy (1884-1949) was a specialist in the droll non-sequitur and the humor of the ridiculous. In this collection of about 40 of his short pieces, some first published in the New Yorker magazine, his comic style is exhibited at its best.

In these amblings through oddities of the animal world (they didn't seem so odd until Cuppy got hold of them), he discusses the extinction of the dinosaur, the pterodactyl, the woolly mammoth, dodo, and giant ground sloth—and looks into the private lives of quite a few other, less extinct fish and reptiles. The outcome is a deliriously funny anthology of unforgettable sketches—items that you can't help reading aloud if there's anyone in earshot.

The book includes such essays as "Do Fish Think, Really?," "Fish

Out of Water," "Aristotle, Indeed!," "Are the Insects Winning?," and "Thoughts on the Ermine," as well as short articles on the cod (who has no vices but whose virtues are awful), the tortoise (who is slow, plodding, herbivorous, and against all modern improvements), cobras, blennies, crocodiles, and other creatures.

This is the first reprinting of *How to Become Extinct* in 25 years—and you'll find the humor still fresh and consistently amusing. Complementing Cuppy's text are 51 line drawings by the inimitable William Steig, who is still one of our most popular cartoonists.

Complete, unabridged reprinting of original (1941) edition. 51 illustrations by William Steig. xii + 114pp. 5¾ x 8½. Paperbound \$1.00